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PRINCIPLES IN THE MANAGEMENT OF EXTERNAL FECAL FISTULAS

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Fecal fistulas are fairly frequently encountered by those engaged in the practice of surgery. Usually they arise as an unexpected and distressing complication of abdominal operations. Sometimes they heal spontaneously and all that is required of the surgeon is "masterly inactivity." The eradication of others, however, may be an extremely difficult task—one that will tax the skill of the most resourceful operator. There are certain well founded principles which may be used as a guide in the treatment of fecal fistulas and which may expedite the task of the physician and the recovery of the patient. To ignore these rules is often to invite poor results or disaster and, as many of them have not been clearly elucidated before, we will set them forth in the following paragraphs.

The few statistical deductions of this report are based on an analysis of data on 65 consecutive cases of persistent external fecal fistulas in which the patients were surgically treated by the senior author in the period from January 1942 to December 1944 inclusive. Mayo and Schlicke [1] and Lichtman and McDonald [2] have reported data on the cases observed at the Mayo Clinic prior to 1942.

Fecal fistulas may be classified as internal or external. In the former group there is no communication with the body surface, the fistula being an abnormal communication between two hollow viscera. This study is not concerned with internal fecal fistulas except as they are found in association with the external type. External fistulas are those which terminate on the body surface. Such fistulas may have their origin in any of the hollow abdominal viscera, but the present review is confined to a group known as external fecal fistulas. The term "fecal" connotes origin from that portion of the gastrointestinal tract in which the contents have the characteristics of feces. Such fistulas arise from the distal portion of the ileum and from the colon, the jejunum and the duodenum being excluded. Most of the external fecal fistulas of the present series terminated on the abdominal wall, but in occasional instances the external orifice was found in the lumbar, sacral, gluteal or thoracic areas or on other portions of the body surface.

The great majority of the fistulas in this series had as their point of origin the ileum, cecum or sigmoid. This fact is explained by the frequent predilection for these regions of chronic granulomatous disease processes such as regional enteritis and perforating diverticulitis.

Spontaneous fecal fistulas which arise without any antecedent surgical intervention are uncommon. Only 2 such cases were found in this series. In 63 (97 per cent) the fistula followed some type of operative procedure. In a few the original operation had been performed several to many months prior to the advent of the fistula and for a condition which could not have been etiologically related. The 63 postoperative fistulas were all accidentally produced. Cases in which enterostomy or colostomy was performed or other types of enteric stomas were intentionally produced are not included here, our observations regarding the surgical management of these having been recorded elsewhere.[3]

THE AVOIDANCE OF EARLY OPERATION

It is almost universally wrong to attempt to repair an external fecal fistula surgically shortly after its inception. Better results will be obtained if a period of waiting and conservative treatment is indulged in first. Delayed operation is usually not advisable in cases of fresh, penetrating gunshot or stab wounds of the abdomen. If, however, a person who has sustained a penetrating abdominal injury is not seen for many hours or several days after the injury and a fecal fistula has developed, it is best not to attempt to repair the fistula immediately. Other conditions may be present which will require early surgical intervention, but the fistula per se is best left alone. This is likewise true for postoperative fecal fistulas and those which arise spontaneously.

There are several reasons for this. The fact that an external fistula exists usually indicates that the perforation in the bowel which is the point of origin and the fistulous tract are well "walled off" from the general peritoneal cavity by plastic exudate, adhesions, omentum, intestinal loops and other intra-abdominal structures. The danger of spreading, generalized peritonitis is not great. Early in the course of a fecal fistula there is an acute perifistulous inflammatory reaction which involves all the structures which surround the tract. Attempts at repair during this acute inflammatory stage break down the surrounding protective zone of adhesions and omentum, spread the infection and may result in generalized peritonitis and death. It should also be noted that during the early stages the surrounding edema, infection and inflammatory reaction so obliterate the normal landmarks that dissection of the fistulous tracts and recognition and mobilization of the affected segments of bowel are extremely difficult. Even if the

From the Division of Surgery, Mayo Clinic.
Paper published under the auspices of the Section on Surgery, General and Abdominal.

1. Mayo, C. W., and Schlicke, C. P.: The Surgical Management of Fecal Fistulae, Ann. Surg. **114**: 1011-1017 (Dec.) 1941.
2. Lichtman, A. L., and McDonald, J. R.: Fecal Fistula, Surg., Gynec. & Obst. **78**: 449-470 (May) 1944.
3. Dixon, C. F., and Benson, R. E.: Closure of Colonic Stoma: Improved Results with Combined Succinylsulfathiazole and Sulfathiazole Therapy, Ann. Surg. **120**: 562-571 (Oct.) 1944.

American Medical Association, 535 N. Dearborn St., Chicago 10, Illinois.

dissection can be carried out successfully, it is often found that the intestinal wall for a considerable distance proximal and distal to the point of origin of the false opening is edematous, friable and inflamed. Suturing of such intestine is difficult and unsatisfactory, for often the sutures will not hold, the line of closure will separate and the fistula will recur.

Early operation for external fecal fistula is not only fraught with danger and usually unsatisfactory; it is, in addition, often entirely unnecessary. Many external fecal fistulas will close spontaneously with no treatment other than the application of simple conservative measures. Early operation to eliminate the fistula often merely adds insult to the injury already sustained. In 39 per cent of the cases in Deaver's [4] series the fistula closed spontaneously, and in Ray's [5] experience operative procedures were not required in 10 of 11 cases (91 per cent) of fecal fistula following appendectomy. Others [6] have recorded a similar experience.

THE NATURE AND METHODS OF CONSERVATIVE TREATMENT

In the early stages of formation of a fecal fistula there are usually considerable irritation and local inflammation of the peritoneum. In consequence of this, varying degrees of paralytic ileus develop and abdominal distention, constipation, localized abdominal tenderness, vomiting and fever will ensue. The abdominal distention may be contributed to by a subacute mechanical obstruction from the inflammatory mass which surrounds the injured portion of the bowel. Treatment during this phase is best carried out by instituting continuous transnasal intestinal suction, warm applications to the affected area, withholding of food and liquid nourishment and provision of adequate parenterally administered fluid, solution of glucose, and saline and vitamin replacement therapy. Intravenously administered sulfonamide compounds may also be of value, and for this purpose the sodium salt of sulfadiazine may be appropriately used. Infection in the wound is an invariable accompaniment of formation of fecal fistula. Disruption of the wound may occur and, to obviate this, complete rest in bed should be insisted on and the abdominal wall should be reinforced with broad strips of strong adhesive tape and an abdominal binder. Blood transfusions are often of value as a supportive measure and to combat secondary anemia.

In a few to several days the fever and ileus usually subside, general improvement occurs and the subacute stage of the fistula commences. Intestinal drainage can now be discontinued and the peroral intake of fluids and food gradually and cautiously increased. Considerable amounts of purulent material and feces may drain from the wound. Parenterally administered sulfonamide compounds can be dispensed with and other types of treatment instituted. Efforts now are directed toward eliminating the residual perifistulous inflammation, decreasing the passage of intestinal contents through the fistula and improving the patient's general condition. The local application of heat in the form of warm, moist dressings or more intensively by means of diathermy may well be continued, for the value of heat in hastening the resolution of inflammatory processes has often been demonstrated. The infectious nature of the feces can be reduced by the administration of succinylsulfathiazole by mouth. Unfortunately, however, this drug often causes the feces to become liquid. The liquid feces drain readily through the fistulous opening and may result in great excoriation of the skin unless special precautions are taken. To make the intestinal contents more solid, camphorated tincture of opium or bismuth preparations are commonly employed, but probably better for this purpose is one of the psyllium seed products, which absorb intestinal water.

The problem of prevention and treatment of excoriation and erosion of the skin and abdominal wall by fistulous discharges is especially great when the intestinal contents so evacuated come from the ileum and upper segments of the small intestine. For these purposes many ingenious types of pastes, salves, suction appliances and plugs of various sorts have been devised to protect the skin and abdominal wall. In our experience the best results have been obtained with the local application of aluminum paste or, in occasional cases, kaolin paste. The latter substance can be built up around the opening of the fistula to form a cuplike receptacle which collects the dejecta from the fistula and does not allow them to come in contact with the skin.[7] Continuous catheter suction using an electrical suction device will remove the discharges immediately and may often be of benefit. When the skin is soft and macerated, the drying effect obtained by exposing the wound and applying mild, dry heat as obtained from an ordinary electrically lighted hood will often be of aid. In those instances in which excoriation of the skin is especially severe, it is sometimes wise to place the patient in the prone position on a Bradford frame for a few days in such a posture that the external opening of the fistula is in the most dependent position.[8] An opening through the frame permits drainage to take place into a container placed beneath the patient, and soiling of the skin and surrounding tissues is completely prevented.

Chewing gum and various plugs and buttons have all been suggested at one time or another as a means of occluding the fistulous opening. Successes in obtaining spontaneous closure have been obtained with each of these, but in general they are of very limited value. Fecal fistulas heal by contracture of scar tissue and consequent obliteration of the lumen, and it would seem, at least in some instances, that the insertion of a foreign body into the tract would serve simply to prevent the desired contracture and healing. A more universally applicable way of decreasing the flow of excreta from a fistula is by increasing the consistency of the feces and insuring that the bowel distal to the origin of the fistula is patent.

If after twelve weeks to six months of conservative treatment the fistula still persists and no further progress toward spontaneous closure is demonstrable, it must be classified as a late chronic or persistent fecal fistula and the line of therapy must be again altered.

4. Deaver, J. B.: External Fecal Fistula Following Appendicitis, Ann. Surg. **83**: 782-789 (June) 1926.
5. Ray, B. S.: A Study of Appendicitis: 1,500 Cases at the New York Hospital, New York State J. Med. **38**: 412-423 (March 15) 1938.
6. Duley, Wade: Acute Appendicitis: An Analysis of 417 Consecutive Cases, Am. J. Surg. **38**: 40-47 (Oct.) 1942. Gibson, C. L., and Sherrill, W. P.: Prophylaxis of Fecal Fistula in Operations for Acute Appendicitis, Am. J. Surg. **40**: 7-9 (Jan.) 1926. McLaren, Archibald: The Closure of Fecal Fistulae, Journal-Lancet **38**: 185-189 (April 1) 1918.
7. Dixon, C. F., and Deuterman, J. L.: The Management of External Intestinal Fistulas, J. A. M. A. **111**: 2095-2100 (Dec. 3) 1938.
8. Potter, E. B.: Intestinal Fistulae: A Method for Preventing Digestion of the Skin, Ann. Surg. **95**: 700-703 (May) 1932.

THE MANAGEMENT OF PERSISTENT FECAL FISTULAS

The Determination of Etiologic Factors and the Site of Origin.—Just as there is a primary cause for all fecal fistulas, there is likewise a cause for their persistence. Nature is kind and will gradually resorb the products of inflammation and eliminate most fistulas unless insurmountable obstacles exist. In some instances the primary cause and the reason for persistence of the fistula are not the same. A recently observed case illustrated this. The primary cause of the fistula was trauma to the cecum during appendectomy. Persistence of the fistula was, however, apparently due to retained foreign bodies (steel surgical needle and cotton fibers) in the tissues of the abdominal wall. In other instances the primary and secondary factors are the same. This is exemplified by instances of diverticulitis with fistula formation. In these the original perforation in the bowel is due to diverticulitis, and the persistent fecal fistula is also often attributable to continued peridiverticular inflammation and disease of the intestine.

In all cases of fecal fistula the efforts of the physician should be directed toward determination of the cause of the fecal drainage as soon as the patient's condition permits the necessary examinations. As nearly as could be determined, the factor responsible for persistence of the fistula in the 65 cases of this series was as follows: Continued fecal drainage is in many cases attributable to primary disease of the intestine. In this group are included diverticulitis (12 cases), regional enteritis (12 cases), intestinal cancer (7 cases), chronic ulcerative colitis (5 cases), tuberculous[9] enteritis (2 cases) and actinomycosis (2 cases). In other instances the primary disease is not in the intestine but within the peritoneum or adjacent structures. In this classification are included pelvic inflammatory disease (5 cases), pelvic inflammatory disease with associated osteomyelitis (1 case), tuberculous[9] abscess, primary focus extraintestinal (1 case), retained foreign bodies with osteomyelitis (1 case) and osteomyelitis (1 case). The last group of fecal fistulas is composed of those the persistence of which is attributable to pathologic conditions within the fistulous tract itself or in the abdominal wall. There were 5 cases in which the contraction of scar tissue incident to attempts at healing of the fistula resulted in encroachment on the lumen of the bowel at the site of origin of the false communication to such an extent that mechanical factors prevented healing of the tract. In 2 cases recognizable and removable foreign bodies were encountered in the tract or abdominal wall.

There remains a group of 9 cases in which no clinical or pathologic evidence (using ordinary methods) of the cause of the fistula could be determined. The studies of Feinberg,[10] German[11] and Lichtman and McDonald[2] have given a clue as to the possible cause in this group. These investigators have found talc, cotton fibers, lycopodium granules and other minute foreign bodies in intra-abdominal granulomas and fistulous tracts. It may well be that such particulate foreign material was responsible for the persistence of many of the fistulas classified here as indeterminate. It is also possible that in many of the other cases a multiplicity of etiologic factors were present. The grouping here includes only the one most important factor for each case. In many instances there may have been in addition to the primary factor other causes such as retained particulate matter which contributed to the persistence of the fistula.

Careful general examination should always be performed and roentgenograms of the affected regions should be searched for radiopaque foreign bodies. When the fistula arises in the lower left portion of the colon, proctoscopy may afford valuable information. Careful inspection and examination of the fistulous opening and surrounding area and microscopic examination and culture of the discharge from the fistula are of paramount importance. The characteristic "sulfur bodies" of actinomycosis should always be sought and in occasional instances special examinations for other fungi, tubercle bacilli and pathogenic amebas are in order. The most valuable preoperative test, however, is the roentgenographic examination of the intestine following the administration of barium. By this means disease of the bowel can be recognized and in many instances the site of origin of the fistula can be determined. In some cases injection of a radiopaque liquid into the fistulous tract followed by roentgenograms will give information as to the origin, length and ramifications of the tract.

The Determination of Patency of the Bowel Distal to the Fistula.—It is foolish to attempt to close a fistula if the bowel distal to the point of origin is subacutely or completely obstructed. Intestinal obstruction will certainly result, and recurrence of the fistula will surely follow. When an obstruction is found in the bowel distal to the point of origin of a fistula, this must first be relieved. If this is done the fistula will often heal spontaneously, for in this type of case fistulas often depend for their continued existence on increased intraluminal pressure in the bowel secondary to obstruction.

Essentials in the Preoperative Care of Persons Who Are to Undergo Surgical Treatment for External Fecal Fistulas.—Before making a direct surgical attack on a fecal fistula it is apparent from the foregoing discussion that several conditions should, if possible, be met. The first requisite is to determine the cause of the persistent fecal fistula; the second, to know from what segment of the intestine the false communications have their origin. The third requisite is the determination of the patency of the bowel distal to the fistula and, fourth, an adequate trial at conservative management should have been made.

There are several other conditions which it is desirable to meet before instituting definitive surgical treatment. The general condition of the patient should be improved as much as possible. Persons who have persistent external fecal fistulas are often debilitated, weak, anemic and undernourished. It is not amiss to hospitalize a patient for several weeks of preoperative preparation. The nutritional status can be improved with a high caloric, high protein diet. Appropriate medications and blood transfusions will correct anemia when it exists. When derangements of electrolyte balance are present, they should be corrected and vitamins should be given in amounts sufficient to overcome any tendency toward deficiency.

It must next be determined that all evidences of acute inflammation around the fistulous tract and in the abdominal wall have subsided. If such is not the case, conservative measures as previously outlined may be continued for a while longer.

9. Histologic diagnosis only.
10. Feinberg, Robert: Talcum Powder Granuloma, Arch. Path. **24**: 36-42 (July) 1937.
11. German, W. M.: Dusting Powder Granulomas Following Surgery, Surg., Gynec. & Obst. **76**: 501-507 (April) 1943.

For at least three days and preferably for five to six days before operation succinylsulfathiazole should be administered in adequate doses. The usual procedure is to give 4 Gm. of this drug every four hours for the first twenty-four hours and 2 Gm. every four hours thereafter. The last dose is given approximately six hours before the time of operation. For three to four days before operation a high carbohydrate, very low residue type of diet, gentle catharsis with a saline laxative and repeated saline enemas are employed to reduce the amount of retained fecal material. During the twenty-four hours immediately preceding operation enemas and laxatives are discontinued, 2 fluidrachms (7 cc.) of camphorated tincture of opium is given every four hours and aspirations of the rectum are performed.

If the patient can meet all the foregoing requirements and is properly prepared, the surgeon will often choose to make a direct attack and resect the fistula and underlying diseased parts, for by so doing the best chances for an early and permanent cure are obtained. Certain circumstances will alter the plan, however, and experience may indicate the preferability of conservative surgical procedures.

The Types of, and Indications for, Conservative Surgical Treatment, Curettage of the Fistulous Tract.—If after an adequate trial of conservative medical management all evidences of active inflammation about the tract have subsided, fecal drainage is minimal or almost entirely absent and no significant disease of the intestine or perifistulous structures can be demonstrated, simple curettage will remove any epithelial lining of the tract and may stimulate healing sufficiently to cause closure of the fistula. It is occasionally successful. Cases in which treatment was by curettage were considered nonsurgical and not included in the present series.

Short-Circuiting or Sidetracking Procedures: Short-circuiting or sidetracking procedures are a very valuable form of treatment for persons who have persistent external fecal fistula. In general they serve the purpose of aiding patients who cannot meet the conditions essential to a direct attack on the fistula. They are useful as a preliminary procedure for those in whom a persistent acute or subacute inflammatory reaction in the intestine and about the fistula will not subside with conservative medical treatment, for diversion of the fecal stream will aid resolution of the inflammatory process. They are also useful for those whose general condition is so poor that a more extensive operation would be unduly hazardous. A preliminary short-circuiting procedure may allow a striking improvement in general health. Short-circuiting procedures are also used as a palliative procedure in cases of large, perforating, inoperable cancers of the intestine in which an external fecal fistula has formed. Occasionally a short-circuiting procedure will turn out to be a form of definitive treatment and will result in complete subsidence of the fistula.

The purpose of short-circuiting and sidetracking procedures is to divert the fecal stream from the segment of intestine which gives origin to the fistula. When the fistula originates in the terminal portion of the ileum, the cecum, the ascending colon or the hepatic flexure, this can be accomplished by ileocolostomy. The abdominal incision for this operation should be made at a distance from the infected region around the fistula.[12] Two types of ileocolostomy are commonly employed. In the exclusion type the ileum is transected proximal to the diseased region, the distal end is inverted and the proximal end is anastomosed to the colon at a point distal to the diseased region (usually to the transverse colon). The side to side type of anastomosis is preferable, but end to side union may also be employed. In the ordinary type of ileocolostomy (ileocolostomy in continuity) the ileum is not divided. A simple side to side anastomosis is effected between a segment of ileum above the diseased region and the colon distal to the involvement.

What results can be expected from these procedures? In the occasional case in which there is no disease in the underlying bowel, spontaneous subsidence of the fistula will result and no other treatment will be necessary. When the fistula arises from a segment of ileum or cecum which is the site of regional or tuberculous enteritis or chronic ulcerative colitis of the regional type, a sidetracking procedure is usually not curative. Its main advantage has been, in the experience of the senior author, that it aids in improving the patient's general condition and makes the necessary resection less formidable by dividing it into stages. This point is, however, strongly contested by some[13] who feel that regional enteritis with fistulas will heal completely with the performance of an exclusion type of ileocolostomy alone. Further study will be required to settle the point.

Ileostomy is a type of sidetracking operation which is the procedure of choice in the treatment of persons who have external fecal fistulas arising from chronic ulcerative colitis of the rectum, sigmoid or entire colon. It does not eliminate the fistulas, but by diverting the fecal stream from the diseased large intestine it reduces the amount of irritating discharge from the fistulas and great improvement in the patient's general health may accrue. Second stage resection of the diseased segments, usually the entire colon, is necessary to eradicate the fistulas and the disease.

When the fistulas arise from the left portion of the colon, proximal colostomy may be used as a sidetracking procedure when activity of the disease or the patient's condition does not permit primary resection. The stoma should be placed far proximal to the diseased region so that, if resection is later undertaken, the stoma will not interfere with mobilization of the left portion of the colon. Colonic stomas are easily and conveniently established in the transverse colon, and this site is preferred whenever possible. Perforating diverticulitis with external fecal fistulas deserves especial mention here. In this disease the conditions necessary to permit a primary resection of the fistulas and diseased bowel can seldom be met without the performance of a preliminary short-circuiting procedure (transverse colostomy). Diverticulitis produces a very acute, phlegmonous and indurated inflammatory reaction which is very slow to subside. Even after the fecal stream has been diverted, conservative measures must be employed for at least three months, and often it is six months or one year before the inflammatory reaction has subsided sufficiently to enable the surgeon to proceed with resection.

Methods of Resection in the Treatment of Persistent External Fecal Fistulas.—The Type of Incision: The incision should encircle and excise the fistulous tract

12. Keyes, E. L.: Further Experience with the Exclusion Operation for the Treatment of Fistula of the Small Intestine, South. M. J. **35**: 832-837 (Sept.) 1942.

13. Garlock, J. H., and Crohn, B. B.: An Appraisal of the Results of Surgery in Treatment of Regional Ileitis, J. A. M. A. **127**: 205-208 (Jan. 27) 1945.

(fig. 1). Lockhart-Mummery[14] has advocated a remote incision made through a clean field at a distance from the external opening of the fistula, but there are several disadvantages to this. In the former type the openings of the fistula are encircled by a purse string suture before the incision is made, and if care is taken

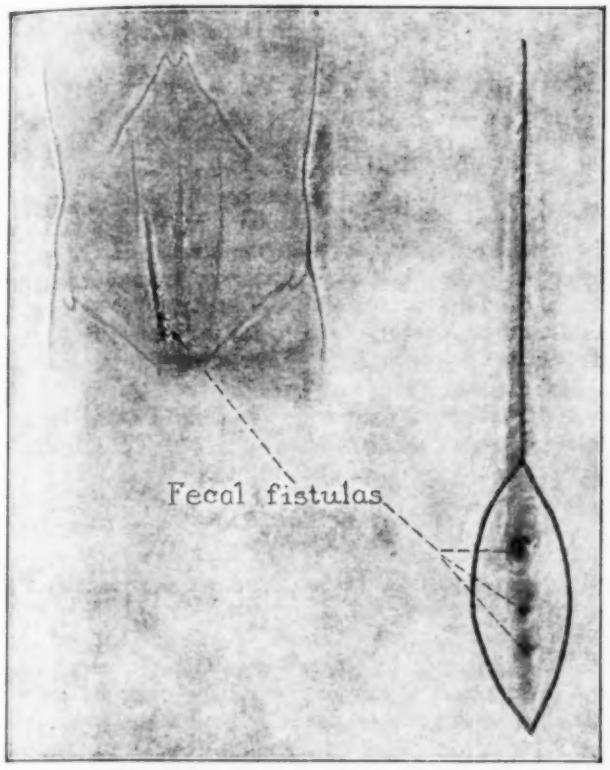

Fig. 1.—Left, three fistulous openings in lower end of right paramedian scar. Right, the incision (indicated by solid line) encircles and excises the fistulas.

not to incise the tract accidentally during the dissection there is little contamination. In the remote type of incision the tract must be transected from the inside at the level of the peritoneum. This leaves intact the segment of the tract which traverses the layers of the abdominal wall. The infected contents of this portion of the fistula may spill into the peritoneal cavity. Other objections to the remote incision are that the raw surface left after the fistula has been dissected free from the abdominal wall must be reperitonealized from the inside. This task is often difficult when the incision is remote, but it is accomplished easily with the routine closure of the abdominal wall when the original incision encircles the fistulous tract. With the remote incision it is advisable at the conclusion of the operation to excise the portion of the tract left in the abdominal wall and the surrounding diseased tissues. This procedure is accomplished more satisfactorily at the time of the initial incision.

In some cases the external openings of the fistula will be in the gluteal, lumbar, sacral or thoracic region or in such a position on the abdominal wall that they cannot be included in the incision. For these there is no alternative to the use of a remote incision. In other cases in which there are multiple, widely separated openings all of which cannot be included in the incision, the remaining tracts must be dissected free from the intraperitoneal aspect.

14. Lockhart-Mummery, P.: Methods of Closing Fecal Fistulae, Surg., Gynec. & Obst. **29**: 312-314 (Sept.) 1919.

Mobilization and Inspection of the Intestine: Coffey[15] and others have discussed extraperitoneal procedures in the surgical treatment of external fecal fistulas. These have a field of usefulness in the elimination of colonic or enteric stomas or the occasional accidentally produced fistula in which the skin and mucous membrane of the bowel are close together or in continuity. In the great majority of cases of persistent fecal fistula, however, and in all cases in which disease of the underlying intestine is suspected or known to be present, the peritoneum should be opened and the intestine mobilized so that it can be thoroughly examined by direct inspection (fig. 2). With proper precautions against contamination the danger of peritonitis is minimal, for the peritoneum has been well vaccinated against the pathogenic organisms present and the use of the sulfonamide compounds affords extra protection.

The Extent of the Resection: All diseased tissue must be removed. This includes not only the fistulous tract and the surrounding infected tissues of the abdominal wall but all the diseased bowel and other infected and useless intraperitoneal structures (fig. 3). In some cases it will be found on inspection that no significant disease of the intestine is present. For these cases simple resection of the fistulous tract, excision of a small rim of normal intestinal wall around the origin of the tract and closure of the opening are all that it is necessary to do. In other cases there is a scar tissue contracture of the bowel at the site of the origin of the fistula, and after excision of the tract a small plastic procedure will be necessary to maintain an adequate

Fig. 2.—The peritoneum is opened and the bowel is mobilized, revealing the origin of the fistulas from a diseased terminal ileum.

intestinal lumen. These two types of procedures were performed eighteen times in the present series.

In the majority of cases of this series (35 cases) disease of the underlying intestinal loops was demonstrable and resection was undertaken. In 21 cases

15. Coffey, R. C.: Remote or Indirect Subperitoneal Drainage in the Extraperitoneal Closure of Persistent Fecal Fistulae, Ann. Surg. **45**: 827-835 (June) 1907.

resection of varying lengths of ileum and the right side of the colon was necessary. This type of operation is usually performed in one stage (19 of 21 cases), intestinal continuity being regained by simultaneous side to side ileocolostomy. There were 9 resections of portions of the left side of the colon. All of these operations were performed in multiple stages as extraperitoneal resections with subsequent closure of the resulting colonic stoma or with a preliminary sidetracking operation followed by resection. In 1 case primary disease of the ileum (regional enteritis) had perforated into and involved the sigmoid colon. In another instance a primary carcinoma of the sigmoid, in addition to forming an external fecal fistula, had secondarily involved the ileum extensively. In both of these cases double resection of sigmoid and ileum was performed. In 3 cases the underlying disease and resulting fistulas were so extensive that removal of almost the entire colon, leaving only the rectum and lower part of the sigmoid, was necessary.

In 13 cases one or more internal fistulas were found coexistent with the external communication. When this

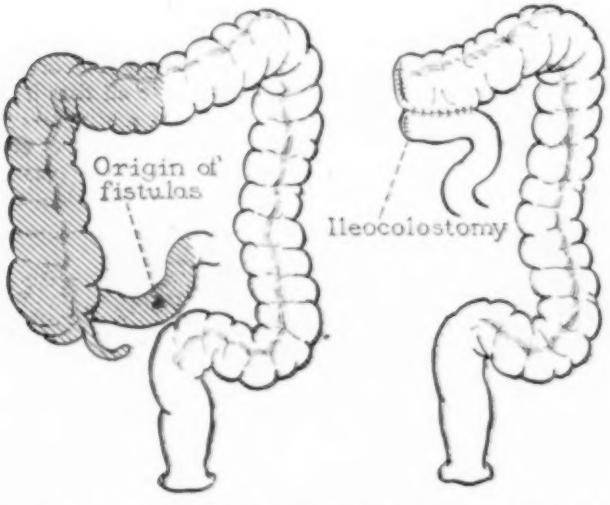

Fig. 3.—Left, shaded area indicates amount of bowel to be resected. Right, intestinal continuity regained by ileotransverse colostomy (side to side).

situation is encountered, the internal fistula must be resected also in order to effect a cure. In 10 cases enteroenteric fistulas were found. In some instances these were undoubtedly of benefit to the patient while the disease process was still present, for they represented spontaneous short circuits around diseased and obstructed segments of intestine. Enterovesical fistulas were encountered in association with external fecal fistula 2 times. For these, in addition to resection of the fistula and diseased bowel, it is necessary to excise the communication between the bowel and the urinary bladder. In a previous report we discussed the management of such cases and indicated the desirability of temporary suprapubic cystostomy when resections of the bowel and the bladder are performed simultaneously.[16] In 1 additional case external fecal and enterovaginal fistulas coexisted.

At the conclusion of the operation 5 Gm. of sulfathiazole or sulfanilamide is dusted intraperitoneally and a small additional amount is sprinkled in the incision. It is also often advisable to insert a soft rubber intraperitoneal drain.

16. Dixon, C. F., and Benson, R. E.: Unpublished data.

Postoperative Care.—Whenever there is a suture line in the intestine which is not protected by a proximal colonic stoma or other type of artificial vent, the bowel should be kept well decompressed by transnasal intestinal suction for the first four to five postoperative days. If at the end of this time the patient tolerates having the tube clamped without distress, it may be removed and the peroral administration of fluids and food gradually increased.

As an additional prophylactic measure against infection, parenteral sulfonamide therapy may be employed. It has been our practice to administer slowly 5 Gm. of sodium sulfadiazine diluted in 2,000 cc. of isotonic solution of sodium chloride subcutaneously, starting twenty-four hours after the operation. In this manner a concentration of sulfonamide compound in the blood adequate for prophylactic purposes is maintained by the use of minimal amounts of the drug.

In an occasional case the region of the external opening of the fistula will be surrounded by many other old surgical incisions and extensive scarring. In such instances it may be necessary to sacrifice considerable skin and subcutaneous tissue. As a result there may be some tension on the skin suture line and, the blood supply to the region already being poor, some danger of necrosis exists. To obviate this, refrigeration of the wound by the continuous application of ice bags may be used. In several instances we have thought that the procedure was of definite benefit. It also frequently produces gratifying alleviation of pain in the incision.

The remainder of the postoperative treatment does not differ materially from that of the ordinary patient who has undergone an intestinal operation.

Special Considerations.—One of the types of persistent external fecal fistula in which treatment is difficult is that in which the patient is a woman and the original pathologic condition was pelvic inflammatory disease with pelvic peritonitis. Many loops of intestine may be firmly intricated in a mass of pelvic adhesions and large chronic tubo-ovarian abscesses and other inflammatory collections may be encountered. To dissect out the fistulous tract, release the intestine, remove the diseased tissue and restore some semblance of normality to the pelvis is indeed often a difficult task. Six such cases were encountered in the present series. For all cases of external fecal fistula, but especially those in which the primary pathologic change is pelvic inflammatory disease or diverticulitis of the sigmoid with perforation, the importance of prolonged conservative treatment until all evidences of acute inflammation have subsided cannot be stressed too much.

External fecal fistulas which pass through bone are extremely refractory to treatment. The difficulty lies in fulfilling the principle of removing all diseased tissue. Not only are the removable soft tissues involved but bony structures are infected as well (osteomyelitis) and these can seldom be completely extirpated. Our usual procedure has been to dissect out the tract, transect it at the point of entrance into bone, remove all diseased soft tissues and thoroughly curet the osteomyelitic tract, removing all possible sequestrums. A preliminary or simultaneous proximal artificial stoma is established to defunctionalize the segment of intestine on which operation is performed. After many weeks or months the stoma may be closed and intestinal continuity reestablished. Even with the most elaborate precautions, however, poor results are common. The mechanism of recurrence of the fistula seems to lie in

the development of an abscess between the proximal end of the osteomyelitic tract and the intestine. This ruptures into the bowel and the bony tract to reestablish the fistula. Three such cases are included in the present series. In 2 of these preoperative and postoperative penicillin therapy seemed to be of some value.

Enteroabdominal actinomycosis with formation of external fecal fistula is ordinarily not amenable to surgical treatment. When the disease is so extensive that fistulas have formed, it is virtually impossible to eradicate it completely by surgical methods and recurrence is prompt. In 2 cases included in the present series of 65 cases in which treatment was surgical, incision and drainage of intra-abdominal abscesses only were performed. One of the patients showed no improvement with penicillin therapy; the second has shown some improvement but after months of intermittent therapy with penicillin still has active disease. A third nonsurgical patient, not included in the present series, who had a less advanced stage of the disease showed striking early improvement with intensive penicillin treatment, but insufficient time has elapsed to evaluate the final result.

MORTALITY

In the entire group of 65 cases there were two hospital deaths (3 per cent). One patient who underwent resection of the terminal ileum and right portion of the colon for extensive regional enteritis with multiple external and internal fecal fistulas died on the fourteenth postoperative day of thrombosis of the portal vein. The other patient died of widespread enteroabdominal actinomycosis. Surgical treatment in this case was limited to incision and drainage of abdominal abscesses.

SUMMARY

1. Early operation for the elimination of external fistulas is usually not advisable.

2. Many fistulas close spontaneously with conservative, nonsurgical treatment.

3. In the early, acute stages of formation of fecal fistula, treatment consists in transnasal intestinal suction, warm applications to the affected area and adequate parenteral fluid, solution of glucose, saline solution and vitamin replacement therapy. Parenterally administered sulfonamide compounds and blood transfusions may be of value.

4. In the subacute stage, efforts are directed toward eliminating the residual perifistulous inflammation, decreasing the passage of intestinal contents through the fistula and improving the patient's general condition.

5. Before instituting definitive surgical treatment for chronic, persistent fecal fistulas the following conditions should be met if possible: (*a*) The etiologic factors responsible for persistence of the fistula should be determined; (*b*) the segment of intestine from which the false communications have their origin should be determined; (*c*) it should be known whether the bowel distal to the lesion is patent; (*d*) an adequate trial of conservative management should have been made; (*e*) the general condition of the patient should be evaluated; (*f*) all evidences of acute inflammation about the fistulous tract should have subsided.

6. Conservative surgical treatment, such as short-circuiting or sidetracking procedures, is used when the patient cannot meet the prerequisites for a more extensive, direct surgical approach.

7. In applying resection methods in the treatment of persistent, external fecal fistulas, (*a*) the incision should, when possible, encircle and excise the fistulous tract; (*b*) in most cases best results will be obtained if the peritoneum is opened and the affected segment of bowel is mobilized and inspected; (*c*) all diseased tissue should be removed.

8. The types of persistent external fecal fistulas in which treatment is most difficult are (*a*) those in which the patient is a woman and the original pathologic condition was pelvic inflammatory disease with pelvic peritonitis, (*b*) those in which the fistula arises in a region affected by severe diverticulitis with perforation, (*c*) those in which the fistula passes through bone and (*d*) those in which the fistula is associated with enteroabdominal actinomycosis.

9. In the 65 cases of persistent external fecal fistulas of this series, in each of which treatment was surgical, there were two hospital deaths (3 per cent).

PENETRATION OF PENICILLIN INTO FOCI OF INFECTION

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The control of infection by penicillin is generally acknowledged to be dependent on the susceptibility of the bacterial species, the relative resistance of the strain responsible for the infection and the duration of its exposure to a therapeutically effective concentration.[1] To these three factors we would add a fourth, the attainment of a concentration in the blood sufficiently high to secure penetration into dense inflammatory foci in which bacteria are embedded. Very much higher blood levels are necessary to obtain this objective than for simple sterilization of the blood stream.

In order to facilitate the penetration of chemotherapeutic agents into the vegetations of subacute bacterial endocarditis, some clinicians[2] have heparinized their patients. It is doubtful whether the prolongation of the coagulation time of the blood to thirty or sixty minutes has any appreciable effect on the masses of blood platelets and fibrin of which the vegetations of subacute bacterial endocarditis are composed, especially since they are invaded very early by actively proliferating fibroblasts. Autopsies on heparinized patients with subacute bacterial endocarditis have revealed no gross or microscopic evidence to substantiate the hypothesis that heparin in the amounts employed exerts any effect on the structure of the vegetations. We have therefore omitted the administration of heparin in the penicillin therapy of the last 25 patients with subacute bacterial endocarditis and have achieved sterilization of the blood stream and apparently complete

From the First Medical Service and the Division of Bacteriology Laboratories of the Mount Sinai Hospital.

The work on which this paper is based was done under contract recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the Mount Sinai Hospital.

1. Rammelkamp, C. H., and Maxon, T.: Resistance of Staphylococcus Aureus to the Action of Penicillin, Proc. Soc. Exper. Biol. & Med. **51:** 386-389 (Dec.) 1942. Dawson, M. H.; Hobby, G. L., and Lipman, M. O.: Penicillin Sensitivity of Strains of Nonhemolytic Streptococci Isolated from Cases of Subacute Bacterial Endocarditis, ibid. **56:** 101-102 (June) 1944. Cooke, J. V.: A Simple Clinical Method for the Assay of Penicillin in Body Fluids and for the Testing of Penicillin Sensitivity of Bacteria, J. A. M. A. **127:** 445-449 (Feb. 24) 1945. Bloomfield, A. L.; Kirby, W. M. M., and Armstrong, C. D.: A Study of "Penicillin Failures," ibid. **126:** 685-691 (Nov. 11) 1944.

2. Kelson, S. R., and White, P. D.: A New Method of Treatment of Subacute Bacterial Endocarditis, J. A. M. A. **113:** 1700-1702 (Nov. 4) 1939. Loewe, L.; Rosenblatt, P.; Greene, H. J., and Russell, M.: Combined Penicillin and Heparin Treatment of Subacute Bacterial Endocarditis, ibid. **124:** 144-149 (Jan. 15) 1944. Dawson, M. H., and Hunter, T. H.: The Treatment of Subacute Bacterial Endocarditis with Penicillin, ibid. **127:** 129-137 (Jan. 20) 1945.

elimination of the infection in the valves in 22 by more careful attention to the attainment of high blood levels of penicillin.

In spite of the fact that penicillin is readily diffusible, it does not penetrate from the blood stream into the normal spinal fluid, tears, breast milk and saliva or into the cornea, lens, vitreous humor, brain, dura, nerves and bone marrow unless huge amounts are administered parenterally and extremely high blood levels are attained. In the presence of an inflammatory process with increased vascularization, slight penetration can be accomplished into these tissues. Although only a trace is found in the normal spinal fluid after parenteral doses as high as 300,000 units, the blood-brain barrier becomes permeable during meningitis to small but therapeutically effective concentrations.

Similarly a therapeutic level may be found in the normal aqueous of dogs only after the intravenous administration of a dose comparable to 900,000 units in man, yet effective concentrations are achieved after much smaller doses in the presence of a corneal ulcer or abrasion.[3]

On the other hand, some organs and tissues such as the extraocular muscles and even some less vascularized tissues like the sclera and conjunctiva manifest a selective absorption of the drug and may at times contain a concentration greater than that of the blood. Infections in well vascularized soft tissues respond to concentrations of the drug that are completely ineffective in relatively avascular hard tissues such as bones.[4]

TABLE 1.—*Coefficients of Resistance to Penicillin of Organisms Isolated in Twenty-Nine Cases of Subacute Bacterial Endocarditis*

Number of Cases	Organism	Coefficient of Resistance
4	Streptococcus viridans	1
1	Staphylococcus albus	1
8	Streptococcus viridans	2
1	Streptococcus hemolyticus	2
8	Streptococcus viridans	3
2	Streptococcus viridans	5
1	Streptococcus viridans	10
1	Enterococcus	10
1	Streptococcus viridans	20
1	Enterococcus	25
1	Enterococcus	150

TABLE 2.—*Dose of Penicillin Recommended for Infections with Organisms of Varying Coefficients of Resistance*

Coefficient of Resistance of Infecting Organism	Penicillin Dose Recommended by Intramuscular Injection Every Three Hours	Peak Blood Concentration to Be Achieved *
1	15,000	0.5
2 to 3	25,000	1.0
4 to 5	50,000	2.0
5 to 10	100,000	6.0
10 to 20	200,000	11.0
20 to 30	300,000	16.0

* In units per cubic centimeter of blood serum. Peak is obtained about twenty minutes after intramuscular injection.

It has been the general experience that much larger doses and much higher blood levels must be maintained to control infections in tissues with a relatively poor blood supply. Our own experience would indicate that there may be other tissue barriers as well as the degree of vascularization of an infected focus which determine the absorption capacity of a tissue.

It is still the generally accepted practice to resort to continuous intravenous or intramusucular therapy in severe infections with bacteremia and to vary the total daily dose, depending on the in vitro resistance of the organism. This technic results ordinarily in the maintenance of a uniform blood level of sufficient height to accomplish sterilization of the blood of bacteria of comparatively low resistance, but it may fail to eliminate the more resistant bacteria and those embedded in the primary focus, i. e. in the vegetations of subacute bacterial endocarditis, in a thrombophlebitis or in an osteomyelitis. Under these circumstances the blood may again become infected shortly after discontinuance of prolonged continuous intravenous or intramuscular therapy as the result of outgrowth of bacteria from the primary focus. In our experience a total daily dose of penicillin may often be more effective in eradicating such primary foci of infection if it is given in divided doses of large size rather than as a continuous intravenous or intramuscular drip.

Table 1 illustrates the difference in the penicillin resistance of the bacteria isolated from 29 cases of subacute bacterial endocarditis. Employing the standard Staphylococcus aureus H strain for the measurement of blood levels of penicillin, we arbitrarily established the coefficient of resistance of this organism to penicillin as unity. The penicillin resistance of the isolated organisms is expressed in terms of comparison to the standard. The minimum penicillin blood concentration necessary in a given case is estimated by multiplying the coefficient of resistance of the infecting organism by 0.16 unit, the minimal effective level established for the standard strain of staphylococci by Keefer.

TABLE 3.—*Penicillin Blood Level Obtained by Continuous Intravenous Infusion*

Total Daily Dose, Units of Penicillin	Average Range of Blood Levels,* Units per Cc. of Blood Serum
100,000	0.1 to 0.2
200,000	0.2 to 0.4
500,000	0.8 to 1.2

* These figures represent an average of at least ten series of determinations, with from two to five determinations in each series.

We have outlined in table 2 the peak concentrations which seem, in our clinical experiences, to be required for the treatment of infections with organisms with varying coefficients of resistance.

In our early experiences with penicillin, continuous intravenous administration was employed to obtain constant blood levels of sufficient height to exceed the estimated resistance of the infecting organism. The blood levels obtained by this method, and by continuous intramuscular drip, are listed in table 3.

Although a favorable response was obtained in many infections, a number of therapeutic failures were encountered in spite of the fact that the blood levels were consistently higher than required in vitro to match the coefficient of resistance of the infecting organism. Autopsies in 2 cases indicated that sterilization of the underlying infected focus, such as valvular vegetations in subacute bacterial endocarditis, or infected thrombi, had not been achieved.

The much greater rise (and fall) of the blood level after single intramuscular injections of various amounts

3. Struble, G. G., and Bellows, J. G.: Studies on the Distribution of Penicillin in the Eye and Its Clinical Application, J. A. M. A. **125**: 685-690 (July 8) 1944. Leopold, I. H., and LaMotte, W. O., Jr.: Penetration of Penicillin in Rabbit Eyes with Normal, Inflamed and Abraded Corneas, Arch. Ophth. **33**: 43-46 (Jan.) 1945.

4. Bigger, J. W.: Treatment of Staphylococcal Infections with Penicillin by Intermittent Sterilization, Lancet **2**: 497-500 (Oct. 14) 1944. Dawson, Hobby and Lipman.[1] Bloomfield, Kirby and Armstrong.[1]

of penicillin [5] are recorded in table 4. Occasional discrepancies were encountered, for example when the blood level of penicillin after the intramuscular injection of 100,000 units in a single dose failed to rise above 2 units, although the usually observed peak was 6.6 units. The reason for such discrepancies has not been determined. It does not seem to depend on the volume output of the urine, nor is the discrepancy constant in the same individual.

TABLE 4.—*Penicillin Blood Level Obtained After a Single Intramuscular Injection* *

Amount Injected, Units of Penicillin	Time After Injection: Units per Cc. of Blood Serum			
	20 Min.	40 Min.	60 Min.	120 Min.
15,000	0.5	0.2	0.14	Trace
20,000	0.8	...	0.3	0.06
25,000	1.0	0.8	0.6	0.1
30,000	1.3	...	0.8	0.13
40,000	2.0	1.3	1.0	0.4
50,000	2.0	1.5	1.3	0.6
100,000	6.6	4.0	2.5	1.0
200,000	11.4	6.6	4.3	1.2
300,000	16.0	13.0	9.5	2.3

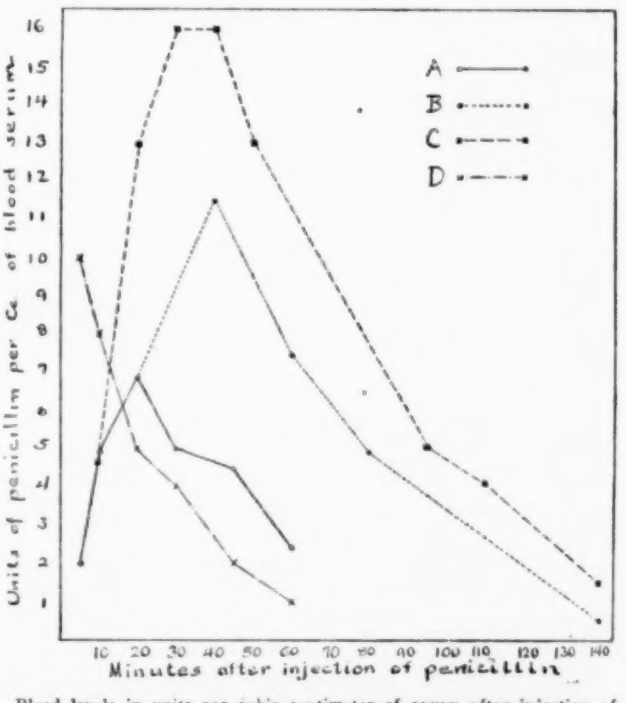
* These figures represent an average of at least twenty-five series of determinations, with from three to six determinations in each series. The figures are only averages and do not indicate the range. The variations in some instances were wide, but on the whole the averages listed represent a fair picture of the blood level which may be anticipated with the various doses employed.

Our clinical experience seemed to warrant the conclusion that the repeated exposure of bacteria with a very high coefficient of resistance to high peak concentrations of penicillin in the blood, even though of short duration, are often of greater therapeutic efficacy than continuous blood levels at lower concentrations. This has been true especially under conditions in which the bacteria are in deeply situated foci of infection, as on the heart valves, where extremely high peak levels are necessary to secure penetration of therapeutically effective concentrations. In subacute bacterial endocarditis both the continuous intravenous or intramuscular injection of 200,000 to 500,000 units a day and the intermittent intramuscular injection of the same total amount in divided doses every three hours for four or five weeks are equally efficacious in controlling the infection permanently when the infecting organism is of relatively low resistance (one to three times the resistance of the standard strain of Staphylococcus aureus H). Therapeutic failures were encountered after the continuous as well as intermittent injection of penicillin, when the infection was due to organisms (Streptococcus viridans or Enterococcus) which were five to twenty times as resistant to penicillin as the standard test organism. In these patients the blood stream is usually sterile during the four weeks while therapy is being given, but the bacteremia may recur soon after treatment is discontinued. These therapeutic failures were attributed to the fact that only surface sterilization of the vegetations had been achieved.

Because of this experience we altered our treatment of subacute bacterial endocarditis by employing only intermittent intramuscular injections, giving 25,000 to 50,000 units at three hour intervals, supplemented when necessary with additional "booster doses" of 50,000 or 100,000 units several times a day. This treatment schedule is continued for four or more weeks. When the infecting organism responsible for the bacteremia is exceptionally resistant (coefficient of resistance of 5 to 20) we have been more successful with the use of supplementary "booster doses" of 100,000 or 200,000 units every twelve hours, in addition to routine intramuscular injections of 50,000 units at three hour intervals. More recently we have increased the routine dosage for these patients to 100,000 units every three hours for five weeks.

In a patient with endocarditis due to an enterococcus with a resistance coefficient of 150, we have succeeded in clearing the blood of bacteria only by administering 1,000,000 units every three hours with "booster doses" of an additional 1,000,000 units twice a day, a total daily dosage of 10,000,000 units. Although the blood stream was free from bacteria throughout the five weeks of therapy, permanent sterilization of the vegetations was not achieved and blood cultures were again positive within a week after cessation of treatment.

Of 29 patients with subacute bacterial endocarditis treated by us with penicillin, 6 died of embolism or circulatory failure during or soon after completing therapy and must be regarded as treatment failures. In the 1 patient whose blood stream was sterilized of an Enterococcus with a resistance of 150, the blood infection promptly recurred after the completion of five months of therapy. Three patients required a second course of treatment with larger doses before the blood stream was permanently sterilized. One required a third course of treatment because of recurrence three months after his discharge from the hospital and has now been well for eight months. Twenty-two of the 29 patients in the series have remained well and bacteria free for six to nineteen months since discharge.



Blood levels in units per cubic centimeter of serum after injection of penicillin by intravenous and intramuscular routes: *A*, penicillin blood level curve after the intramuscular injection of a single dose of 100,000 units; *B*, curve after a second single dose of 100,000 units given intramuscularly twenty minutes after the first dose of 100,000, i. e., when the peak concentration of the first dose is obtained; *C*, curve after a second single dose of 200,000 units given intramuscularly ten minutes after the first dose of 100,000 units; *D*, curve after the intravenous injection of a single dose of 100,000 units.

In purely local infections without bacteremia, the maintenance of a constant level of penicillin in the

5. Fleming, A.; Young, M. Y.; Suchet, J., and Rowe, A. J. E.: Penicillin Content of Blood Serum After Various Doses of Penicillin by Various Routes, Lancet **2**: 621-624 (Nov. 11) 1944.

blood is not essential. In fact, in subacute or chronic local infections in which the organisms are encased in dense granulomatous tissue it is obviously more important to achieve exceptionally high levels in the blood several times a day so as to favor penetration into the granulomatous area. Whenever possible, the penicillin should also be repeatedly injected in high concentrations directly into such infected foci. As an example, good results were obtained in a patient whose chest was infected with Actinomyces with a coefficient of resistance to penicillin of 50 by administering 500,000 units in two massive doses daily for four weeks. The penicillin blood level twenty minutes after the intramuscular injections of 200,000 units reached 11.4 units, after 200,000 units intramuscularly and 100,000 units into the chest wall, 16 units per cubic centimeter of serum. This therapeutic result probably could not have been achieved if the same total daily dose had been spread thinly over twenty-four hours by a continuous intravenous drip or by frequent small intramuscular injections.

CONCLUSIONS

1. In our experience intermittent intramuscular injections of large doses of penicillin at three hour intervals seem in general to be more effective in the control of bacteremia and of local infections than continuous intravenous administration of the same total daily amount.

2. The intramuscular administration of penicillin in divided doses has the distinct advantage of producing a higher peak level in the blood intermittently throughout the day, thereby favoring penetration of penicillin into vegetations of acute and subacute bacterial endocarditis and into suppurative thrombophlebitis or other primary sites of bacteremia.

3. To assure penetration of adequate amounts of penicillin into primary foci responsible for bacteremia (i. e. vegetations, thrombophlebitis), additional massive "booster doses" several times a day are often desirable. Such "booster doses" should be five or six times the routine intramuscular dosage which has produced blood levels sufficient to clear the blood of bacteria.

4. Subacute bacterial endocarditis and other chronic infections due to organisms of relatively high penicillin resistance are more advantageously treated with massive doses at frequent intervals throughout the day (every three hours). The minimum duration of therapy of subacute bacterial endocarditis, in our experience, should be five weeks.

5. In purely localized infections with highly resistant organisms, such as Actinomyces, penicillin is best concentrated in a few massive intramuscular doses each day in order to favor penetration by means of exceptionally high peak levels and, if possible, also administered directly into the infected area.

Sanitation in the Environment.—The sanitary control of the environment is the most important foundation stone of a communitywide public health program. The simple sanitary principles for prevention of disease and promotion of community health that may be applied in any community, large or small, are quite elementary, yet they are so fundamental that they must always be the chief concern of the official health service. The subject is so important that the major portion of the early textbooks on preventive medicine and public health were devoted to a description of the details of the application of the principles of environmental sanitation in the community.—Smillie, Wilson G.: Preventive Medicine and Public Health, New York, Macmillan Company, 1946.

SUPRADIAPHRAGMATIC SECTION OF THE VAGUS NERVES

Effect on Gastric Secretion and Motility in Patients with Peptic Ulcer

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Chicago

Complete division of the vagus nerves to the stomach for the treatment of intractable duodenal ulcer in 2 patients was reported by Dragstedt and Owens[1] in 1943. Subsequent reports of additional cases were made by Dragstedt, Palmer, Schafer and Hodges[2] in 1944 and by Dragstedt and Schafer[3] in 1945. At the present time a total of 38 patients with duodenal ulcer, gastric ulcer or gastrojejunal ulcer have been treated in this clinic by this principle. Details of the surgical technic, indications and end results of the procedure will be discussed elsewhere. In 34 of the patients section of the vagus nerves was accomplished by exposing the lower esophagus after a left thoracotomy and dividing the fibers just above the diaphragm.[3] In 4 patients a laparotomy was performed, the triangular ligament to the left lobe of the liver was divided to expose the cardia, the esophagus was mobilized and pulled downward into the abdomen, and the vagus trunks were ligated and divided along the lower esophagus. The postoperative course of these patients has been characterized by complete relief of ulcer symptoms, objective evidence of healing of the ulcers and definite improvement in general health in almost all cases. In a further investigation of the mechanism of these effects, studies have been made on the gastric secretion and motility in a small series of ulcer patients both before and after section of the vagus nerves.

Evidence that an abnormality in the secretion of gastric juice is present in most if not all ulcer patients and that this may cause the lesion and prevent it from healing has accumulated from both the clinic and the experimental laboratory. A part of this evidence has been summarized recently by one of us[4] and need not be reviewed here. Most of the clinical studies on gastric secretion in ulcer patients have been limited to observations on the secretory response to certain specific stimulants, such as the Ewald meal, alcohol or histamine, as compared with normal persons. While considerable variations have been found, patients with duodenal ulcer on the whole and those with gastric ulcer perhaps less so secrete more gastric juice in response to these types of stimuli than do normal persons. The effect has not been found to be sufficiently uniform, however, to be of diagnostic value.[5] Comparatively little attention has been given to the state of activity of the gastric glands in the intervals between meals and to the volume and acidity of the continuous secretion in the absence of any known type of secretory stimulus.

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1. Dragstedt, L. R., and Owens, F. M., Jr.: Proc. Soc. Exper. Biol. & Med. **53**: 152, 1943.
2. Dragstedt, L. R.; Palmer, W. L.; Schafer, P. W., and Hodges, P. C.: Gastroenterology **3**: 450, 1944.
3. Dragstedt, L. R., and Schafer, P. W.: Surgery **17**: 742, 1945.
4. Dragstedt, L. R.: Pathogenesis of Gastroduodenal Ulcer, Arch. Surg. **44**: 438 (March) 1942.
5. Alvarez, W. C.: Gastroenterology **1**: 534, 1943.

CONTINUOUS OR NIGHT SECRETION OF GASTRIC JUICE

Beaumont and Pavlov are probably mainly responsible for the view that in the absence of food or psychic stimuli the gastric glands are quiescent. It is chiefly due to the extensive studies of A. J. Carlson on man and lower animals that we now know that this view is incorrect. According to Carlson,[6] a continuous secretion of gastric juice is a normal phenomenon and occurs even in prolonged fasting. The cause is unknown. Presumably it might be due to a persistent secretory tonus in the vagi, the production of secretagogues through the autodigestion of the gastric juice, the endogenous production of histamine-like substances or a combination of these factors.

The studies embodied in this report were made as follows: At 9 p. m. the stomach was emptied and lavaged with an Ewald tube. When the returns were clear, a Levine tube was introduced through the nose into the stomach and continuous suction maintained until 9 a. m. with the Wangensteen apparatus. During this period the patients were shielded from all psychic secretory stimuli, and as a rule sleep was little interfered with. When successfully conducted it is probable that this continuous aspiration more nearly collects the entire

TABLE 1.—*The Continuous Night Secretion of Gastric Juice in Patients with Carcinoma of the Stomach*

Patient Number	Age	Volume, Cc.	Free Acidity, Clinical Units	Total Acidity, Clinical Units
1	56	220	0	40
2	31	220	21	39
3	74	84	0	44
4	74	75	0	18
5	54	290	8	22
6	60	500	9	25
7	60	200	11	30
8	60	290	0	38
9	30	430	0	41
Average		261	4	33

gastric output than can be secured by the intermittent evacuation of the stomach. Even so, it is appreciated that varying amounts of gastric juice probably escape into the duodenum. The aspirate is frequently discolored by regurgitated bile and duodenal content. Such specimens should be discarded. From 3 to 10, twelve hour aspirations were carried out on each patient, and in the ulcer cases the studies were repeated after the vagus section.

Table 1 shows the average gastric aspiration obtained from 9 patients with carcinoma of the stomach. The volume varied between 75 and 500 cc., with an average of 261 cc., and the free acidity between 0 and 21 clinical units. Table 2 displays the continuous night secretion in 5 patients with carcinoma of the colon. The volume here averaged 238 cc. and ranged from 85 to 370 cc. The free acidity varied between 0 and 18 clinical units. Table 3 shows the night secretion of 6 patients with cholelithiasis and chronic cholecystitis. The average volume was 385 cc., with a range between 100 and 630 cc. and a free acidity between 0 and 13 clinical units. In considerable contrast to these three groups, table 4 presents the results obtained in 8 patients with duodenal and 2 with gastric ulcers. The average twelve hour continuous secretion for this group was 821 cc., and this decreased to 335 cc. after division of the vagus nerves. The free acidity was 47 clinical units before and fell to 15 units after the operation. In table 5 are presented data from 9 patients with ulcers but with certain complications which make the determination of continuous gastric secretion more uncertain. Four of this group are patients with duodenal ulcer and high

TABLE 2.—*The Continuous Night Secretion of Gastric Juice in Patients with Carcinoma of the Colon*

Patient Number	Age	Volume, Cc.	Free Acidity, Clinical Units	Total Acidity, Clinical Units
1	69	85	0	31
2	61	205	16	53
3	55	370	18	29
4	58	360	0	15
5	69	170	11	26
Average		238	9	30

grade cicatricial stenosis at the pylorus. Because of the necessity for relieving the obstruction, a subdiaphragmatic section of the vagus nerves was carried out along with a posterior gastrojejunostomy. The material aspirated from the stomach after the operation always contained bile. The remaining 5 patients had stoma ulcers, 3 following gastric resection and 2 following gastroenterostomy. In these also the collection was uncertain because of admixture with duodenal content. However, in spite of this fact a definite reduction in both the volume and the free acidity of the gastric content was brought about by division of the vagus nerves.

These data confirm and amplify those previously reported from this laboratory obtained by similar methods.[7] They provide definite evidence that an abnormally large continuous secretion of acid gastric juice occurs in most patients with ulcer in the absence of stimulation by food or psychic factors. This excessive secretion appears to be due chiefly to an abnormally great secretory tonus in the vagus nerves and is reduced to normal values by complete vagus section.

The Gastric Secretory Response of Ulcer Patients to Histamine Before and After Vagus Section.—It has been demonstrated in experimental animals that histamine stimulates gastric secretion after section and subsequent degeneration of the vagus nerves. It causes

TABLE 3.—*The Continuous Night Secretion of Gastric Juice in Patients with Cholelithiasis and Chronic Cholecystitis*

Patient Number	Age	Volume, Cc.	Free Acidity, Clinical Units	Total Acidity, Clinical Units
1	27	630	13	31
2	49	100	0	24
3	27	300	12	26
4	51	175	13	30
5	45	445	0	27
6	61	600	9	17
Average		385	6	26

secretion of gastric juice from a denervated accessory stomach pouch, and this is not abolished by atropine. The action of histamine must therefore be on the peripheral neuroglandular apparatus or directly on the secreting cells. Studies on the effect of histamine on the human stomach after vagotomy have not been reported.

6. Carlson, A. J.: Physiol. Rev. 3: 1, 1923.

7. Dragstedt, Palmer, Schafer and Hodges.[2] Dragstedt and Schafer.[3]

In the present study the response to histamine stimulation was determined by the method of fractional gastric analysis on all the 19 patients in this series before and after section of the vagus nerves. All examinations were made in the morning in the fasting state. A Levine tube was inserted into the stomach and the gastric content aspirated. One tenth cc. of histamine dihydrochloride 1 to 1,000 solution per kilogram of body weight was injected subcutaneously and the stomach emptied every ten minutes for at least one hour. An abundant secretion of acid gastric juice was produced in all patients before operation, and there was no diminution either in volume or in free acidity after the vagus section. The response of a typical patient to the injection of histamine before and after vagotomy is shown in table 6.

TABLE 4.—*The Continuous Night Secretion of Gastric Juice in Ulcer Patients Before and After Section of the Vagus Nerves to the Stomach*

Patient	Age	Preoperative Continuous Secretion: Volume, Cc.	Preoperative Continuous Secretion: Free Acid, Clinical Units	Preoperative Continuous Secretion: Total Acids, Clinical Units	Postoperative Continuous Secretion: Volume, Cc.	Postoperative Continuous Secretion: Free Acid, Clinical Units	Postoperative Continuous Secretion: Total Acid, Clinical Units	Comment
1. J. W.	66	1,220	20	40	338	0	10	Gastric ulcer, 15 years
2. H. K.	39	723	39	58	65	24	48	Duodenal ulcer, 15 years
3. H. M.	31	775	36	54	428	6	44	Duodenal ulcer, 8 years
4. N. K.	48	717	55	81	400	19	51	Duodenal ulcer, 7 years
5. E. T.	60	786	44	61	358	0	30	Duodenal ulcer, 15 years
6. R. V.	42	1,043	82	98	486	61	82	Duodenal ulcer, 22 years
7. W. W.	57	756	54	72	623	15	56	Duodenal ulcer, 2 years
8. G. K.	43	469	31	54	348	14	42	Gastric ulcer, 4 years
9. C. O.	42	642	66	81	212	2	66	Duodenal ulcer, 15 years
10. W. K.	52	1,086	40	65	226	11	25	Duodenal ulcer
Average		821	47	66	335	15	46	

For each patient the figures given represent the average of at least three determinations.

TABLE 5.—*The Continuous Night Secretion of Gastric Juice in Complicated Ulcer Cases Before and After Section of the Vagus Nerves to the Stomach*

Patient	Age	Preoperative Continuous Secretion: Volume, Cc.	Preoperative Continuous Secretion: Free Acid, Clinical Units	Preoperative Continuous Secretion: Total Acids, Clinical Units	Postoperative Continuous Secretion: Volume, Cc.	Postoperative Continuous Secretion: Free Acid, Clinical Units	Postoperative Continuous Secretion: Total Acid, Clinical Units	Comment
1. H. F.	54	1,142	44	55	395	35	44	Duodenal ulcer with obstruction; subdiaphragmatic vagotomy plus gastroenterostomy
2. H. W.	56	1,241	32	51	902	0	29	Duodenal ulcer with obstruction; subdiaphragmatic vagotomy plus gastroenterostomy
3. W. S.	52	1,105	25	52	893	25	48	Duodenal ulcer with obstruction; subdiaphragmatic vagotomy plus gastroenterostomy
4. J. P.	54	405	25	45	517	14	52	Duodenal ulcer with obstruction; subdiaphragmatic vagotomy plus gastroenterostomy
5. M. B.	59	1,021	22	45	412	14	36	Jejunal ulcer; take down gastroenterostomy plus supradiaphragmatic vagotomy
6. C. B.	42	200	13	36	177	0	30	Jejunal ulcer after gastric resection; supradiaphragmatic vagotomy
7. A. W.	47	566	0	21	361	0	23	Jejunal ulcer after gastric resection; supradiaphragmatic vagotomy
8. G. P.	49	1,126	12	36	233	0	19	Jejunal ulcer after gastric resection; supradiaphragmatic vagotomy
9. M. S.	42	310	6	25	395	0	30	Jejunal ulcer after gastric resection; supradiaphragmatic vagotomy

The Gastric Secretory Response of Ulcer Patients to Caffeine Before and After Section of the Vagus Nerves.—Caffeine elicits a secretion of gastric juice similar in quality to that produced by histamine.[8] This subject has recently been extensively studied by Roth, Ivy and Atkinson.[9] According to these workers, caffeine stimulates gastric secretion in man and the cat but not in the dog. Its effect is not abolished by the administration of atropine. In relatively large doses it produced acute and subacute ulceration of the gastric mucosa in cats. When given to patients with duodenal ulcer it was found to produce a characteristic prolonged secretory stimulation that was considered to have diagnostic value.

The gastric secretory response of the ulcer patients in this study to caffeine was determined by the method of Roth and his associates.[9] After emptying the stomach, 7½ grains (0.5 Gm.) of caffeine with sodium benzoate in 200 cc. of water was instilled through a Levine tube. After thirty minutes the stomach was again emptied, and thereafter ten minute fractional samples were withdrawn for analysis. Tests were made on 17 patients with duodenal, gastric and gastrojejunal ulcers. One patient failed to respond; a second showed a mild stimulation of secretion before the vagus section but not after. The remaining 15 responded with an increase in volume and free acid both before and after the vagotomy. The stimulation was as well defined after the operation as before and in general was less than that produced by histamine. A representative test is indicated in table 7.

The Gastric Secretory Response of Ulcer Patients to Insulin Hypoglycemia Before and After Section of the Vagus Nerves.—Bulatao and Carlson [10] in 1924 discovered that the injection of insulin increases gastric motility. In 1930 Roholm [11] and Kalk and Meyer [12] demonstrated that it also causes a stimulation of gastric secretion which begins when the blood sugar reaches hypoglycemic values. The secretagogue action of insulin can be abolished by the administration of an amount

8. Ihre, B. J. E.: Human Gastric Secretion, London, Oxford University Press, 1939.
9. Roth, J. A.; Ivy, A. C., and Atkinson, A. J.: Caffeine and "Peptic" Ulcer, J. A. M. A. **126**: 814 (Nov. 25) 1944.
10. Bulatao, E., and Carlson, A. J.: Am. J. Physiol. **68**: 148, 1924; **69**: 107, 1924.
11. Roholm, K.: Acta med. Scandinav. **73**: 472, 1930.
12. Kalk, H., and Meyer, P. F.: Ztschr. f. klin. Med. **120**: 692, 1932.

of glucose sufficient to counterbalance the hypoglycemia; furthermore, insulin does not augment gastric secretion in a person with diabetes unless the blood sugar is in the normal range when given. The increased secretion of gastric juice in response to insulin is therefore a part of the hypoglycemic syndrome. It appears to be due to a stimulation of gastric secretory fibers in the vagi for section of these nerves (Okada [13] and La Barre [14]) or the administration of atropine abolished the effect. For this reason Ihre,[8] Babkin [15] and lately Hollander [16] have recommended the use of insulin hypoglycemia as a method for testing the integrity and secretory function of the vagus nerves to the stomach. Fractional insulin gastric analyses were performed on our patients by withdrawing samples of gastric juice at ten minute intervals following the administration of 20 units of crystalline insulin subcutaneously; all tests were made in the fasting state. This test was made on 17 patients before and after vagotomy. Two patients showed no response before vagotomy, so the lack of response following operation was not significant. Fifteen cases reacted to the injection of 20 units of insulin with an increase in the amount and free acidity of the gastric juice. This response was often delayed as long as an hour and was accompanied by a low blood sugar and hypoglycemic symptoms. The stimulation of gastric secretion by insulin was not as pronounced as with histamine but approximated that obtained with caffeine. One patient (14, Mr. W. W.) had a slight but definite stimulation of gastric secretion in response to insulin following vagotomy. The remainder of the group were not affected by insulin following vagotomy. Table 8 presents the results in 1 such case.

TABLE 6.—*Effect of Histamine on Gastric Secretion in a Patient with Duodenal Ulcer Before and After Section of the Vagus Nerves to the Stomach*

Time	Volume, Cc.	Free Acid, Clinical Units	Total Acid, Clinical Units	Comment
		Before Operation		
8:00-8:10	10	66	73	8:10: 0.7 cc. of histamine solution
8:20	55	72	80	
8:30	51	110	114	8:30: Typical ulcer pain
8:40	38	115	119	
8:50	65	109	114	
9:00	32	107	114	
9:10	45	100	107	
9:20	25	100	108	9:30: Pain about gone
9:30	24	92	102	
		Ten Days After Operation		
7:30-7:40	15	44	57	
7:50	18	56	65	7:50: 0.7 cc. of histamine solution
8:00	44	75	85	
8:10	60	100	111	
8:20	61	100	110	
8:30	19	104	112	
8:40	22	100	111	
8:50	32	82	92	

The Gastric Secretory Response of Ulcer Patients to a Sham Meal Before and After Section of the Vagus Nerves.—The classic researches of Pavlov proved that the sight, smell or taste of palatable food provokes a secretion of gastric juice in the stomach. The effect is a true conditioned reflex and is mediated by the vagus nerves. It would appear that the use of this principle in the sham meal ought to be the most effective way to test the excitability of the vagus secretory fibers in ulcer patients as compared with normal persons. Ten of the ulcer patients in this study were given a sham meal gastric analysis before and after vagotomy. The test was performed by having the patient chew certain foods without swallowing. The gastric content was aspirated every ten minutes for an hour. Only 3 of the 10 patients showed a definite increase in the volume and acidity of the gastric juice in response to the sham meal before operation. None of the patients responded following the vagotomy. Table 8 presents the findings in 1 case. The unsatisfactory results obtained with this test are probably due to several factors. It is difficult to get patients to chew food and refrain from swallowing some of it. The presence of the indwelling tube doubt-

TABLE 7.—*Gastric Secretory Response to Caffeine in a Patient with Duodenal Ulcer Before and After Section of the Vagus Nerves*

No.	Time	Volume, Cc.	Free Acid, Clinical Units	Total Acid, Clinical Units	Comment
			Before Operation		
1.	8:10-8:20	14	30	40	8:20: 7½ grains of caffeine in 200 cc. of water
2.	8:30	9	0	5	
3.	8:40	9	4	13	
4.	8:50	6	10	20	8:50: Stomach emptied, 200 cc. obtained
5.	9:00	16	48	52	
6.	9:10	18	45	55	
7.	9:20	26	48	58	
8.	9:30	12	43	55	
9.	9:40	8	35	53	
10.	9:50	7	20	40	
			Eleven Days After Operation		
1.	7:55-8:05	14	7	23	8:05: 7½ grains of caffeine in 200 cc. of water
2.	8:15	7	17	29	
3.	8:25	10	23	37	
4.	8:35	12	49	62	8:35: Stomach emptied; 15 cc. obtained
5.	8:45	44	57	69	
6.	8:55	36	69	81	
7.	9:05	24	48	66	
8.	9:15	79	8	22	
9.	9:25	36	26	38	
10.	9:35	18	34	48	

TABLE 8.—*Gastric Secretory Response of Ulcer Patients to Insulin Hypoglycemia Before and After Section of the Vagus Nerves*

Time	Volume, Cc.	Free Acid, Clinical Units	Total Acid, Clinical Units	Comment
		Before Operation		
9:05-9:15	34	0	17	9:05: Blood sugar 71 mg. per 100 cc.
9:25	15	0	14	9:15: 20 units of insulin
9:35	7	0	15	
9:45	9	0	20	
9:55	33	0	22	
10:05	8	18	32	
10:15	8	18	34	10:15: Blood sugar 18 mg. per 100 cc.; drowsy and weak
10:25	8	28	54	
10:35	7	32	92	
10:45	11	85	98	10:40: Blood sugar 18 mg. per 100 cc.
10:55	13	53	84	
11:05	3	28	72	
		Eight Days After Operation		
7:45-7:55	8	0	48	7:55: Blood sugar 58 mg. per 100 cc.
8:05	3	0	120	7:55: 20 units of insulin
8:15	2	0	57	
8:25	5	0	29	
8:35	27	0	13	
8:45	6	0	17	
8:55	8	0	19	
9:05	2	0	19	
9:15	—1	0	..	9:10: Blood sugar 33 mg. per 100 cc.
9:25	0	..	..	

13. Okada, S.; Kuramochi, K.; Tsukahara, T., and Ooinoue, T.: Pancreatic Function: Humoroneural Regulation of Gastric, Pancreatic and Biliary Secretions, Arch. Int. Med. **43**: 446 (April) 1929.
14. La Barre, J., and de Cespédès, C.: Compt. rend. Soc. de biol. **106**: 481 and 1249, 1931.
15. Babkin, B. P.: Secretory Mechanism of the Digestive Glands, New York, Paul B. Hoeber, Inc., 1944.
16. Hollander, F.: Gastroenterology **3**: 463, 1944.

9. Roth, J. A.; Ivy, A. C., and Atkinson, A. J.: Caffeine and "Peptic" Ulcer, J. A. M. A. **126:** 814 (Nov. 25) 1944.
11. Ronoim, K.: Acta med. Scandinav. **73:** 472, 1930.
12. Kalk, H., and Meyer, P. F.: Ztschr. f. klin. Med. **120:** 692, 1933.

less exerts a definite psychic inhibition and, lastly, it is probable that more attractive food should have been served.

The Motility of the Empty Stomach of Ulcer Patients Before and After Section of the Vagus Nerves.—The normal stomach in man does not remain inactive in the interdigestive phase but exhibits a periodic activity which gives rise to the hunger sensation. According to Carlson [17] the pressure variations in the stomach as recorded by the usual balloon method are caused by (1) a tonus rhythm, (2) hunger contractions and (3) respiratory and pulse pressure changes. The tonus contractions vary in amplitude but have a remarkable uniformity of rate, twenty seconds. The amplitude increases without a change in rate during hunger periods and is much decreased immediately after a period. The hunger periods are initiated by weak contractions with long pauses; the contractions become stronger, the pauses briefer, with the climax a number of very powerful and rapid contractions approaching incomplete tetanus. Relaxation is relatively abrupt. The periods vary in duration from a few minutes to one and one-half hours, with a quiescence of one-half to two hours between hunger periods.

TABLE 9.—*Gastric Secretory Response of Ulcer Patients to a Sham Meal Before and After Section of the Vagus Nerves*

Time	Volume, Cc.	Free Acid, Clinical Units	Total Acid, Clinical Units	Comment
		Before Operation		
8:10-8:20	17	20	35	
8:30	11	0	13	
8:40	16	0	17	
8:50	13	36	55	8:40: Sham meal started
9:00	22	39	59	8:50: Sham meal completed
9:10	27	61	81	
9:20	25	70	87	
9:30	32	57	82	
9:40	16	49	69	
		Thirteen Days After Operation		
9:00-9:10	6	9	14	
9:20	24	0	18	9:10: Sham meal started
9:30	9	0	22	9:20: Sham meal completed
9:40	5	0	20	
9:50	15	0	18	
10:00	25	0	18	

In a recent review Quigley [18] stated that the majority of workers have found that the hunger contractions of ulcer patients are normal or only slightly exaggerated. Shay and his associates [19] report hyperperistalsis, hypertonicity and hypermotility in uncomplicated duodenal ulcer which coincides with the usual observation of the roentgenologist. Barron and Curtis [20] studied the motility of the empty stomach of a patient with vagotonia and reported that after division of the left or anterior vagus nerve there was a decided decrease in the duration of the periods of motility and in the number and amplitude of the contractions. This effect persisted for at least five months.

In the present studies the balloon for recording gastric contractions was attached to a Miller-Abbott tube, which in turn was connected with a chloroform manometer. The stomach had been emptied for the previous fifteen hours by continuous gastric suction. Seconal 0.9 Gm. by mouth or pentobarbital calcium 0.18 Gm. by rectum was given to encourage sleep during the test. The drugs in these doses were found to have little or no effect on gastric motility and were a great aid in securing satisfactory records.

G. K., a white man aged 42, whose kymographic record is illustrated in figure 1, had a very large gastric ulcer visualized both by x-rays and by gastroscopy. The tracing taken before

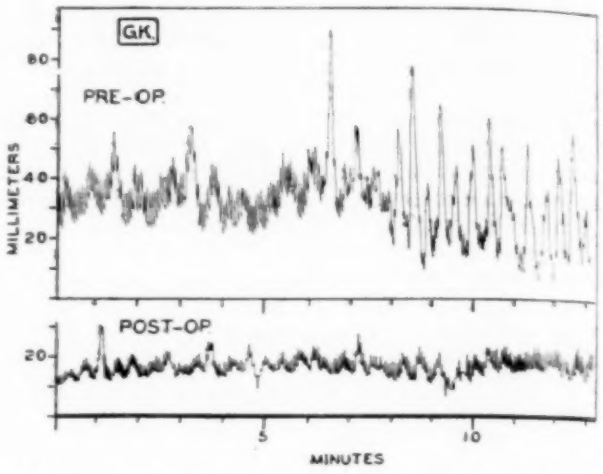

Fig. 1.—Representative tracings showing the motility of the empty stomach of a patient with a gastric ulcer before (upper) and after (lower) supradiaphragmatic section of the vagus nerves to the stomach.

operation shows gastric motility somewhat more pronounced than usually found in normal man. There is a fairly high tonus rhythm culminating in a series of vigorous hunger contractions. Both the tonus and the number and amplitude of the hunger contractions were much reduced by transthoracic section of the vagus nerves.

R. V., a white man aged 42, had ulcer symptoms for twenty-three years, and x-rays demonstrated a duodenal ulcer with a crater. The tracings in figure 2 show exceptionally vigorous

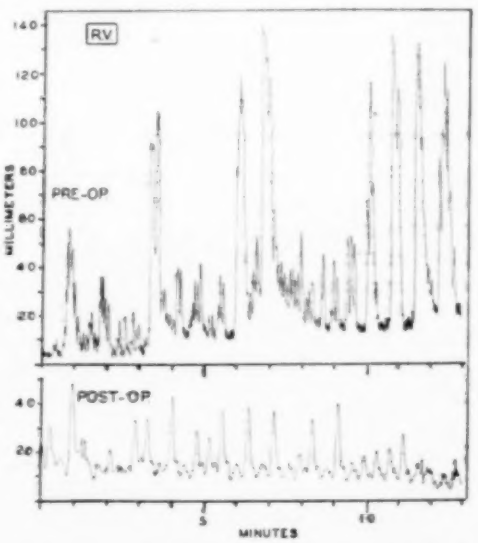

Fig. 2.—Representative tracings showing the motility of the empty stomach of a patient with a duodenal ulcer before (upper) and after (lower) supradiaphragmatic section of the vagus nerves to the stomach.

contractions of the empty stomach and almost constant motility before operation, with rather pronounced reduction after section of the vagus nerves.

J. P., a white woman aged 54, had ulcer symptoms for eight years with several massive hemorrhages. X-ray examination revealed considerable deformity of the duodenal bulb with high grade obstruction. The tracings in figure 3 show more

17. Carlson, A. J.: The Control of Hunger in Health and Disease, Chicago, University of Chicago Press, 1916.
18. Quigley, J. P.: Motor Physiology of Stomach, Pylorus and Duodenum, with Special Reference to Gastroduodenal Ulcer, Arch. Surg. **44:** 414 (March) 1942.
19. Shay, H.; Gershon-Cohen, J., and Fels, S. S.: Ann. Int. Med. **16:** 772, 1942.
20. Barron, L. E., and Curtis, G. M.: Effect of Vagotomy on Gastric Motor Mechanism of Man, Arch. Surg. **34:** 1132 (June) 1937.

York, Paul B. Hoeber, Inc., 1944.
16. Hollander, F.: Gastroenterology **3**: 463, 1944.

or less continuous contractions of the empty stomach before operation, with one period of tetany. Because of the pyloric obstruction, a gastroenterostomy was performed and at the same time the vagus nerves were divided in the region of the lower esophagus. The tracings taken after the operation show a rather pronounced decrease in gastric motility. This is, no doubt, in part due to the gastroenterostomy.

In addition to these patients, studies have been made on 2 patients with gastrojejunal ulcers following partial gastrectomy treated by supradiaphragmatic transthoracic vagotomy and on 3 patients with duodenal ulcers. Two of these were treated by simple vagus section above the diaphragm, while on the third a gastroenterostomy was performed for obstruction, and the vagus nerves were sectioned beneath the diaphragm. In each case a definite decrease in the gastric tonus and in the frequency and amplitude of the hunger contractions was produced.

COMMENT

The data obtained in this investigation furnish strong support for the view that an excessive continuous secretion of gastric juice occurs in most patients with gastro-

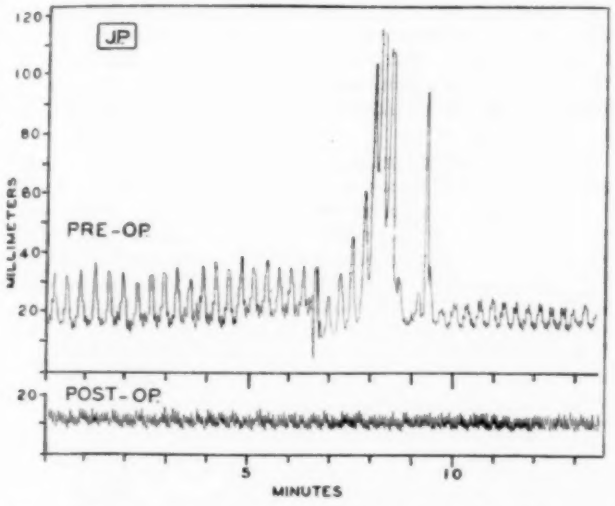

Fig. 3.—Representative tracings showing the motility of the empty stomach of a patient with obstructing duodenal ulcer before (upper) and after (lower) gastroenterostomy and subdiaphragmatic section of the vagus nerves.

duodenal ulcer in the absence of any known type of gastric secretory stimulus. The reduction in this secretion produced by complete division of the vagus nerves to the stomach proves that the hypersecretion is neurogenic in character. It probably represents an excessive secretory tonus in the vagus nerves of central origin and points to some functional disturbance in the nervous system as ultimately responsible for the disease. The presence of excessive motility of the stomach in many ulcer patients and its return toward the normal state after section of the vagus nerves indicates that a hypertonus of the motor augmentor fibers in the gastric vagi is also often present. Both excessive motility and excessive secretion may of course operate to produce an ulcer in the stomach and maintain its chronicity. Of these two factors the experimental data definitely indicate that hypersecretion is the more important. The beneficial results obtained by section of the vagus nerves in ulcer patients do not permit a decision on this point, since both secretion and motility are reduced.

While it is perhaps true that the gastric glands of ulcer patients respond to the stimulus of food, alcohol, histamine or caffeine with a greater output of gastric juice or some of its constituents than is the case in normal individuals, the results of this investigation suggest that the most pronounced and regular departure from the normal lies in the volume and acidity of the continuous night secretion. This is apt to be especially large in young patients with duodenal ulcer who present in varying degree other signs of nervous tension and instability. The determination of this night secretion appears to be the most valuable of all the gastric secretory tests from the standpoint of both diagnosis and prognosis. Patients with hypersecretion are especially prone to develop secondary stoma ulcers following gastroenterostomy or gastroduodenostomy or even after partial gastrectomy but respond very favorably to complete section of the vagus nerves.

The persistence of a secretory response to histamine after bilateral vagotomy in man is in harmony with the result obtained on lower animals and indicates that the site of action of histamine is probably directly on the cells of the gastric glands. Caffeine apparently acts at the same point, since stimulation also persists after vagus section. On the other hand, insulin hypoglycemia produces a vigorous secretion of gastric juice through stimulation of gastric secretory fibers in the vagus nerves, and this is completely abolished after bilateral vagotomy. This fact, as Hollander suggests, makes it a very valuable method to determine if the vagus section has been complete. The sham meal has a similar application and deserves further investigation.

CONCLUSIONS

1. The continuous night secretion of gastric juice in the empty stomach of patients with gastric and duodenal ulcers is usually much greater than in normal man.
2. This hypersecretion is chiefly neurogenic in character and is much reduced by section of the vagus nerves to the stomach.
3. The empty stomach of ulcer patients often displays a hypertonicity and hypermotility, with exaggerated hunger contractions, and these are returned toward the normal state after bilateral vagotomy.
4. Complete section of the vagus nerves to the stomach in man abolishes the secretion of gastric juice produced by a sham meal or by insulin hypoglycemia but has little or no effect on the response to histamine or caffeine.
5. The absence of a secretory response to a sham meal or to insulin hypoglycemia is good evidence that section of the vagus nerves to the stomach has been complete.

ABSTRACT OF DISCUSSION

DR. KEITH S. GRIMSON, Durham, N. C.: Dr. Dragstedt and his associates at the University of Chicago have translated the evidence obtained from years of physiologic and clinical study into a surgical interpretation that has developed vagotomy as a valuable addition to the group of operations currently employed for ulcer. Fifteen months ago, after discussions with him, an investigation of the clinical and physiologic effects of transthoracic vagotomy was begun at Duke Hospital. Eighteen patients with refractory ulcers that had produced serious symptoms during an average time of eleven years were subjected to transthoracic vagotomy. The ulcers healed in several weeks and there has as yet been no evidence of recurrence. The physiologic effects produced by vagotomy have been remarkable. Our observations have in most instances agreed with those presented in this paper. Twelve hour night secretion volumes were reduced from an average of 946 cc. before operation to an average of 342 cc. after operation. The acidity of the secretion of the fasting

Motor Mechanism of Man, Arch. Surg. 34:1132 (June) 1937.

high grade obstruction. The tracings in figure 3 show more

stomach was changed from an average p_H of 1.72 before operation to an average of 3.55 afterward. There was, however, considerable individual variation. Five patients had only moderate reduction. Under the conditions of our experiments both insulin hypoglycemia and histamine produced an increase of free acid before and also after the vagotomy. The increase produced by both was definitely less after operation. The average increase in free acid after histamine before operation was from 29 cc. of tenth normal hydrochloric acid to 64 cc. The average change several weeks and several months after operation was from 7 cc to 18 cc. Insulin hypoglycemia produced an average maximum increase of free acid to 105 cc. before operation and to 23 cc. several weeks and several months afterward. It is not now possible to explain this similar effect of vagotomy on chemical and nervous secretion mechanisms. Gastrometric examination revealed a remarkable reduction to subnormal of the gastric hypermotility observed before operation. The gastric stretch reflex was abolished. Relief of ulcer pain occurred promptly after the vagotomy. This could be related either to reduction of stomach motility, to reduction of acidity or to interference with sensory fibers that might have been present in the vagus. In general we have not been able to disassociate the role played by acidity from the role played by decreased motility in our clinical and physiologic study.

Dr. Francis D. Moore, Boston: Dr. Dragstedt and his group have effectively revived an operative procedure which was given clinical trial several times in the past twenty years with an abdominal approach. These previous experiences with abdominal vagotomy have been generally unsuccessful. The transthoracic operation has many anatomic and physiologic advantages which make it justified to reevaluate entirely the usefulness of vagus division in peptic ulcer. Our work on this subject at the Massachusetts General Hospital has been in progress for about eighteen months and up to the present time we have performed vagus resection on 12 patients suffering from peptic ulcer. The procedure we have used is essentially similar to Dr. Dragstedt's with the one difference that we have opened the diaphragm and resected a portion of each nerve from just below the lung root to the midportion of the gastric fundus. The symptomatic relief experienced by our patients has been much the same as that described by Dr. Dragstedt. The ulceration in our patients has usually healed in one to three weeks, the patients with jejunal ulcers taking somewhat longer to heal. I can corroborate Dr. Dragstedt's secretory findings with but few exceptions. I find that the p_H of gastric contents is raised from 1.0 to 3.0 or more units throughout the day and night and that free acidity is virtually abolished throughout the twenty-four hour period with the exception of isolated observations just before meals or late at night, when 15 to 20 units of free acid may appear. Chloride ion concentration is decreased a variable amount. There is little or no change in total base or in pepsin concentrations. Our studies on motility and sensation have been carried out in collaboration with Dr. William Chapman. We have found motility changes similar to those described by Dr Dragstedt, although there is some return of atypical gastric activity six to eight months postoperatively. In addition we have demonstrated that there is no change in the pain threshold to balloon distention in the lower esophagus, stomach, duodenum or upper jejunum following vagus resection. This signifies that the relief of pain experienced by these patients is not due to regional anesthesia produced by peripheral nerve section. Instead, it results from a fundamental alteration in some aspect of the ulcer-producing mechanism. The ultimate worth of this procedure will rest on the long-term clinical end results. It is too soon to estimate the value of this operation on the basis of data available at present.

Dr. Geza de Takats, Chicago: Dr. Dragstedt and his associates have presented us with the first technically complete vagotomies ever described in man. Partial vagotomies, usually performed below the diaphragm, have been reported many times with promising but not permanent results; nor has any effort been made to prevent regeneration of the vagus nerves. My early vagotomies done in 1936 and 1939 certainly suffered from both of these defects and showed no lasting effect. That it has been clinically possible to reduce both the excessive volume and the acidity of gastric nocturnal secretion by complete vagotomy is the second great advance the authors have made. This reduction of volume and acidity has been definite in my limited experience with the supradiaphragmatic vagotomy. Most striking, however, is the sudden relief of long-lasting epigastric pain, heartburn and hunger pangs. Gastric and esophageal hypertonus and hypermotility are reduced after vagotomy. The motor component in the symptomatology of duodenal ulcer is dominant, even if the acid secretion is the one which initiates and perpetuates the ulcer. This motor activity is not all central; reflex gastric and esophageal spasms originating from the stomach, duodenum, gallbladder, heart or lung have been definitely demonstrated. Vagotomy has a vast inhibiting influence on these reflexes, since it cuts the efferent side of the reflex arc. The pain of the penetrating lesion, deep, boring and continuous, is not mediated by the vagus. Sympathetic block or splanchnic section can stop such pain unless somatic intercostal fibers are involved by peritoneal involvement. I have stopped the pain of a threatening perforation of the duodenum by blocking the left dorsal sympathetics from the sixth to the ninth segment. Vagotomy may have to be combined with typical gastric operations; the abdominal vagotomy has the great advantage of permitting the examination of the local lesion. The immediate problem now is that of case selection; medically resistant young patients with hypermotility, hypersecretion, no serious stenosis or hemorrhage could be selected for vagotomy, while others who have undergone repeated gastric operations, those with marginal ulcers and inflammatory lesions, in whom a subtotal gastrectomy would be indicated, might be given a trial with vagotomy.

Dr. L. L. D. Tuttle, Houston, Texas: Surely the Chicago group has become aware that the present state of affairs for the handling of peptic ulcer is not what it should be. It is only natural after use of such radical procedures as subtotal resection for ulcer that we look for a procedure that may not have such a tendency toward production of a secondary anemia, a picture simulating pernicious anemia: the weakened patient with swollen ankles and one that may fail to hold his weight and strength. J. Shelton Horsley pointed out in 1933, while discovering the neurogenic theory for the causation of peptic ulcer, that if we were to relieve this condition we must control hypersecretion, hypermotility and hypertonicity. Harvey Cushing pointed out that the truest response of the parasympathetic system (the cranial part) came from stimulation of the interbrain or near that point. He lost 3 patients, who at autopsy showed peculiar lesions in the stomach (perforation of the esophagus, the stomach and the duodenum). These were explained on the basis that stimulation of the vagus had caused one or all three of the responses oversecretion, motility and tonus. It may be possible to approach the question from another angle, that of stimulating the sympathetic instead of suppressing the parasympathetic system. In that case one surely would have to adhere to the theory that normal conditions really are an absolute balance between the sympathetic and the parasympathetic. We have been convinced that caffeine has a deleterious effect on the ulcer patient. It is worth knowing that this is a peripheral effect and not central.* Our group has made use of the insulin or hypoglycemic state in indicating whether or not we had sectioned all of the vagus. A troublesome feature that we encounter is the delay in emptying time of the stomach—this manifests itself not only in those with slight occlusion of the pyloris but in all of the cases. One we feel sure changed from five hour retention to three hour with the use of belladonna and phenobarbital. All our cases have shown improvement clinically, 1 gaining as much as 42 pounds (19 Kg.) and a second becoming free from troublesome duodenal hemorrhage. Dragstedt points out a way to make use of gastroenterostomy —a procedure that has nearly been discarded. The authors are showing us a good procedure. It may fail to do all that is necessary in every case. With section of the vagus we shall see cases that will lend themselves to gastroenterostomy that otherwise would develop the marginal ulcer.

Dr. A. C. Ivy, Chicago: This contribution is important for at least two reasons. The data indicate that the vagus nerves may be concerned in the etiology of peptic ulcer in man and

histamine or caffeine with a greater output of gastric after operation. The acidity of the secretion of the fasting

that the hypercontinuous secretion of gastric juice observed in the majority of patients with an active duodenal ulcer may be affected by vagus section. In addition, the observations increase our knowledge of the effect of the vagi on the stomach of man. A study of the paper suggested that the increased night secretion, which returned toward the normal state after bilateral vagotomy, might be due to the administration of alkalis, which were withdrawn after the operation. It is quite clearly established, in my opinion, that alkaline powders produce what is termed a "rebound secretion" in some patients. Dr. Dragstedt has informed me, however, that most of the patients had not received alkaline powders for several days before the test. The cause of the hypercontinuous secretion which disappeared after vagotomy is of considerable interest from the psychosomatic and physiologic points of view. The fact that the patients did not respond well to sham feeding before vagotomy, even though the meal might have been more attractive, suggests that the appetite mechanism for gastric secretion was not hyperirritable. Several years ago I studied appetite secretion in 6 normal subjects by the use of an indwelling tube. Only 1 responded to the sight of frying and smelling a beefsteak; this subject and 4 others responded to tasting and chewing the beefsteak; and the 6th who did not respond to tasting and chewing, was upset by the process of expectoration. When food is chewed and tasted, two reflex mechanisms for gastric secretion are excited. One is an unconditioned reflex, like the secretion of saliva to acid in the mouth, and the other is a conditioned reflex dependent on learning, which is a reaction to "anticipatory thinking." It would seem that if either of these two mechanisms were hyperirritable in the ulcer patient, more than 3 of the 10 patients would have shown a good response to sham feeding. Necheles and Maskin (*Am. J. Digest. Dis.* **3**:90 [April] 1935) found only a slightly greater secretion in response to sham feeding in 34 ulcer patients as compared to 35 normal subjects. Wolf and Wolff (Human Gastric Function, Oxford University Press) in their subject with a gastrostomy observed increased secretion in the presence of internal conflict, resentment and anxiety even when the subject had no appetite. This indicates that such emotional states do not operate to increase secretion via the appetite mechanism. The response of the authors' patients to insulin before vagotomy was not any greater than that of Ihre's normal human subjects (Ihre: *Acta med. Scandinav.*, supp. 95, 1938). Hence the mechanism on which insulin hypoglycemia operates was apparently not hyperirritable in the author's patients. Unfortunately it is not known on what centers in the brain insulin hypoglycemia acts to stimulate secretion. It may act on some center above the vagal secretory cells in the medulla; for example, on the anxiety mechanism of Wolf and Wolff. The possibility that the hypersecretion is due to a reflex arc the sensory and motor limbs of which reside in the vagi should be considered. This possibility does not require a hyperirritable center at the level of the medulla. Such a reflex mechanism for influencing the motility of the stomach exists in the dog. For example, a duodenal ulcer increases the "tonic motility of the stomach" (type 2 and 3 contractions); this type of motility is abolished by vagus section (Ivy, A. C.: *Arch. Int. Med.* **25**:6 [Jan.] 1920). All of the physiologic vagal mechanisms for gastric secretion can be completely annulled by atropine. The hypernormal interdigestive secretion in peptic ulcer patients cannot be abolished by ordinary doses of atropine. Therefore if this hypersecretion is due to a vagal mechanism it is some abnormal type of vagal effect which is unaffected by atropine unless the factor of the dosage required is concerned. Nevertheless, vagotomy should obviously be more effective than atropine in abolishing the normal or abnormal action of the vagi. Bilateral vagotomy, because it abolishes the cephalic phase of gastric secretion, normal or abnormal, and reduces or abolishes "tonic motility," normal or abnormal, should favor the healing and prevention of recurrences of peptic ulcer. The degree of correctness of this statement depends on whether the stomach of man is like that of the dog and particularly the rabbit, animals which sometimes develop gastric ulcer spontaneously after bilateral vagotomy (Beazell, J. M., and Ivy, A. C.: *Arch. Path.* **22**:213 [Aug.] 1936. Meek, W. J., and Herrin, R. C., *Am. J. Physiol.* **109**:221 [Aug.] 1934).

DR. LESTER R. DRAGSTEDT, Chicago: I wish to express my sincere appreciation to the men who have taken part in this discussion and who have thereby contributed so much to the problem under consideration. It is especially pleasing that our observations have been so largely confirmed. I should like to emphasize the point that these findings are in harmony with the concept that gastroduodenal ulcer is a psychosomatic disease. Presumably the tensions and strains of modern life produce aberrant activity in the central nervous system and this, in turn, leads to abnormally great secretory and motor tonus in the vagus nerves. An increased secretion of gastric juice in the empty stomach becomes then the objective evidence of this central nervous system disturbance which is at the basis of ulcer disease. These facts provide a challenge to the students of psychoanalysis to employ the technics of their discipline in the treatment of patients with duodenal ulcer guided by the effects of their procedures on gastric secretion, which is subject to quantitative measurement. The clinical results of vagus section in patients with gastroduodenal ulcer have thus far been so satisfactory and the physiologic concepts back of the operation so appealing that I feel even at this early date (the oldest patient was operated on not quite three years ago) warranted in recommending transthoracic section of the vagus nerves as a substitute for subtotal gastrectomy in the treatment of duodenal, gastrojejunal and proved gastric ulcers. When definite obstructive symptoms are present the operation should be combined with gastrojejunostomy or gastroduodenostomy, and in this case the division of the vagus nerves may be done beneath the diaphragm.

TREATMENT OF SCARLET FEVER

LIEUTENANT COMMANDER PAUL ASHLEY (MC), U.S.N.R.

Two hundred and ninety-eight consecutive patients with scarlet fever admitted to this activity during June and July 1945 were observed for (1) the degree of toxemia on admission, (2) the type of streptococcus present in the throat, (3) the response to various methods of treatment and (4) the incidence and types of complications. The patients were grouped according to treatment methods, and comparable groups were made up of alternately admitted patients. All patients were free from complications when admitted, and the rash had been present less than thirty-six hours. All convalescent serum used in these cases was made from blood drawn from convalescent scarlet fever patients on the eighteenth day of the illness.

METHOD OF STUDY

Grouping of Cases and Treatment Used.—Groups A1 and A2: A comparison of convalescent serum and antistreptococcus (horse) serum.

Fifty of the first 99 patients were given 50 cc. of human convalescent scarlet fever serum intravenously on admission (group A1), and 49 were given 10 cc. of antistreptococcus serum (commercial, New York State Health Department) intravenously on admission (group A2). As nearly as possible alternate admissions were selected for each group, but men (5 out of 54 tested) found sensitive by skin test to the antistreptococcus serum were not subjected to desensitization but were assigned to the convalescent serum group.

Groups B1 and B2: A comparison of convalescent serums secured at separated intervals in the epidemic.

Forty-nine of the second 99 patients were given, on admission, 50 cc. of human convalescent scarlet fever serum intravenously which had been prepared six weeks

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or more previously (group B1), and 50 patients were given, on admission, 50 cc. of human convalescent scarlet fever serum which had been prepared within the previous week from patients who were about to go to duty. The serum used in group B1 was drawn from a group of convalescent scarlet fever patients from

TABLE 1.—*Sources of Old Serum*

	Type of Group A Streptococci		
	3	17	19 + ANCT*
Present in this percentage of patients	23	37	36

* This abbreviation designates those group A streptococci which are "not common types."

TABLE 2.—*Sources of New Serum*

	Type of Group A Streptococci		
	3	17	19 + ANCT
Present in this percentage of patients	11.6	38.6	50

whose throats the percentages of streptococci listed in table 1 were cultured. This serum is hereafter referred to as "old" serum.

The serum used in group B2 was drawn from a group of convalescent scarlet fever patients from whose throats the percentages of streptococci listed in table 2 were cultured. This serum is hereafter referred to as "new" serum.

Groups C1 and C2: A comparison of convalescent serum with and without penicillin as additional treatment.

Fifty of the third series of 100 patients were given 50 cc. of pooled human convalescent scarlet fever serum intravenously on admission (group C1), and 50 were given 50 cc. of pooled human convalescent scarlet fever serum intravenously on admission, penicillin 30,000 units on admission and penicillin 15,000 units every three hours until the temperature had been normal for five consecutive days (group C2). It had appeared from previous observations that patients receiving penicillin on admission had a smoother course than some apparently less ill who had received only convalescent serum.

TABLE 3.—*Method of Grading*

1. Temperature:		2. White blood cell count:	
98.6 to 99 F.	Grade 1	Below 10,000	Grade 1
99 to 101 F.	Grade 2	10,000 to 15,000	Grade 2
101 to 103 F.	Grade 3	15,000 to 20,000	Grade 3
103 F. and above	Grade 4	Above 20,000	Grade 4
3. Rash:		4. Pharyngitis and tonsillitis:	
Slight	Grade 1	Slight	Grade 1
Moderate	Grade 2	Moderate	Grade 2
Moderate to intense	Grade 3	Moderate to severe	Grade 3
Intense (with petechiae)	Grade 4	Severe with edema and exudate	Grade 4
5. Toxic signs:			
One sign	Grade 1		
Two signs	Grade 2		
Three signs	Grade 3		
Four or more signs	Grade 4		

GRADING OF TOXEMIA

When each patient was admitted, his (1) temperature and (2) white blood cell count were taken, the (3) rash and (4) pharyngitis and tonsillitis were graded by the admitting medical officer and (5) systemic toxic signs such as nausea, vomiting, epistaxis, headache, enlarged cervical lymph nodes, fainting and malaise were noted. Each of these five findings was graded on the arbitrary basis shown in table 3. The grading of numbers 3 and 4 was determined by one medical officer in over 250 of the 298 cases and therefore was relatively uniform.

The toxemia of each patient was numerically evaluated by averaging the grades of these findings and, in turn, the toxemia of the groups of cases was numerically evaluated by averaging the grades of the component cases.

DETERMINATION OF STREPTOCOCCUS TYPE

At the time of admission and before any treatment was given, throat cultures were taken on blood agar plates. Subsequent isolation and typing were done by the local epidemiology unit. The typing serums available were those for types 3, 17 and 19 of group A plus the usual grouping serums. Cultures of beta-hemolytic streptococci which were group A but not types 3, 17 or 19 are classified as group A, not a common type, or ANCT. There were a few cultures in each group of cases which could not be grouped or typed. They are classified as "positive but no type."

TABLE 4.—*Toxemia on Admission*

Group	A1	A2	B1	B2	C1	C2
Toxema grade	2.03	1.80	1.8	2.0	1.8	2.1
Relation of comparable groups	A1 7% more toxic than A2		B2 11% more toxic than B1		C2 16.6% more toxic than C1	

Maximum toxemia = 4.0

TABLE 5.—*Determination of Streptococcus Types*

Throat cultures: Group	A1*	A2*	B1	B2	C1	C2
Type 3	3	4	7	9	6	6
Type 17	11	12	13	10	9	14
Type 19	0	0	8	10	15	12
ANCT	18	12	6	4	6	5
19 + ANCT	18	12	14	14	21	17
Positive no type	5	4	5	7	9	5
Group G	..	..	..	1	..	..
Negative	11	15	10	13	2	4
No culture	2	2	..	..	3	4

* At the time these groups were observed the type 19 serum was faulty and it is believed by the epidemology unit that at least 50 per cent of the cultures called ANCT were really type 19.

RESPONSE TO TREATMENT

The response to treatment in groups A1, A2, B1, B2 and C1 was estimated on temperature and the necessity for the use of penicillin. If a patient's temperature dropped to 99 F. or below during the first seventy-two hours and stayed at 99 F. or below forty-eight hours or more, and if his condition had not necessitated administration of penicillin during the first seventy-two hours, he was considered as having responded well to the treatment. If the temperature persisted above 99 F. for more than seventy-two hours or if his condition necessitated the administration of penicillin during the first seventy-two hours, he was considered as having responded poorly to the treatment.

In group C2 the response to treatment was estimated on the temperature and the necessity for the administration of penicillin longer than ten days. If a patient's temperature dropped to 99 F. or below during the first seventy-two hours, and if his condition did not necessitate the use of penicillin in unusual amounts or for more than ten days (to satisfy the policy of giving penicillin until the temperature had been normal for five days), he was considered as having responded well to the treatment. If a patient's temperature persisted above 99 F.

for more than seventy-two hours or more than a standard amount of penicillin was needed, he was considered as having responded poorly to the treatment.

Any systemic reactions to the convalescent serum or antistreptococcus serum in groups A1 and A2 were noted in order to compare untoward effects of the two substances.

COMPLICATIONS DEFINED

The following were considered complications:

Fever above 99 F. for a consecutive period of forty-eight hours or over for which no cause could be found and which appeared after the temperature had dropped below 99 F. and remained below 99 F. for forty-eight hours or more.

Pharyngitis or tonsilitis which appeared within the first five days of the disease but after the temperature had been 99 F. or below for forty-eight hours.

Cervical adenitis which became accentuated after the patient had initially responded well to treatment.

Lower respiratory infections such as pneumonia, bronchitis and pleurisy.

Otitis media, acute, with or without drainage.

Sinusitis, acute, which could be identified to the satisfaction of the medical officer by a sufficient number of the following signs and symptoms: nasal obstruction and/or drainage, fever, pain in one or more sinuses, tenderness on pressure or percussion over one or more sinuses, orbital cellulitis, or erysipelas of the face associated with other signs of sinus infection.

Rheumatic fever which could be conclusively diagnosed by adequate combinations of major and minor symptoms.

Patients who developed pharyngitis or tonsillitis after the fifth day and who had responded well to the initial treatment were considered to have become cross infected.

TABLE 6.—*Group A Streptococci and Type Percentages*

Group	A1	A2	B1	B2	C1	C2
Total cases	32	28	34	33	36	37
Type 3	9.4%	14%	20.6%	27%	17%	16%
Type 17	34%	43%	39%	33%	25.6%	38%
Type 19 + ANCT	56%	43%	40.4%	40%	57.4%	46%

TABLE 7.—*Response to Treatment*

Group	A1	A2	B1	B2	C1	C2
Patients	50	49	49	50	50	50
Good response	27	36	36	19	30	40
Poor response	23	13	13	31	20	10
Toxemia grade	2.03	1.89	1.8	2.0	1.8	2.1

RESULTS

The total number of patients harboring group A streptococci in each group and the type percentages were as shown in table 6.

Group C2 patients responded better to the treatment than any other group and considerably better than the comparable group C1. It should also be noted that group C2 patients were 16⅔ per cent more toxic than those in group C1. In view of this toxicity the better response of group C2 to the treatment assumes greater meaning. Although a comparison of the treatment response in group C2 to that in any other group except C1 is not quite accurate, it does seem significant that though the toxemic grade for C2 was higher than any other group the response to treatment was consistently better.

The response to treatment is roughly proportional to the grade of toxemia on admission in all groups except C2.

There were three reactions to the administration of the convalescent serum in group A1, and all were of mild degree. There were thirteen reactions to the administrations of the antistreptococcus serum, and five of these were severe, with further elevation of an already high temperature.

TABLE 8.—*Complications*

Group	A1	A2	B1	B2	C1	C2	Total	% of Total
Patients	50	49	49	50	50	50	298	
Fever only	3	5	..	5	5	1	19	6.3
Pharyngitis and tonsillitis	1	2	..	1	..	..	4	1.3
Cervical adenitis	4	1	2	2	2	..	11	3.6
Lower respiratory infections	5	3	1	1	1	..	11	3.6
Otitis media, acute	1	3	1	1	2	1	9	3.0
Sinusitis, acute (orbital cellulitis and erysipelas)	9	1	5	5	2	2	24	8.0
Rheumatic fever	1	..	4	4	1	1	11	3.7
Total complications	24	15	13	19	13	5	89	29.5
Percentages having complications	48	30.6	26	40	26	10	29.5	
Cross infections	4	1	1	0	1	1		
Toxemia grade	2.03	1.89	1.8	2.0	1.8	2.1		

The relative incidence of complications is in proportion to the toxemia on admission in all groups except C2.

CORRELATION OF TYPE INCIDENCES IN CONVALESCENT SERUM AND RESULTS OF TREATMENT

The sources of the two serums used in groups B1 and B2 had the type incidences in the total number of patients having group A streptococci as noted in tables 1 and 2, and groups B1 and B2 themselves had the type incidences in the total number having group A streptococci shown in table 9.

The incidence of type 3 beta-hemolytic streptococci in the source group for the old serum was slightly (2.4 per cent) greater than it was in the group B1 patients who received it. The incidence of type 3 beta-hemolytic streptococci in the source group for the new serum was much (15.4 per cent) less than it was in the group B2 patients who received it. The incidence of type 19 ANCT in the source group for the new serum was moderately (10 per cent) greater than it was in the group B2 patients who received it. There was no appreciable difference in the incidence of type 17 in the source groups for the old and the new serum and in the group B1 and B2 cases. There was also no appreciable difference in the incidence of type 19 + ANCT in the source group for the old serum and the group B1 cases.

TABLE 9.—*Type Incidences in Groups B1 and B2*

	Source of Old Serum	B1	Source of New Serum	B2
Total group A streptococci	338	34	60	36
Type 3	25%	20.6%	11.6%	27%
Type 17	37%	39%	36.6%	33%
Type 19 + ANCT	30%	40.4%	50%	40%

TABLE 10.—*Recovery of Beta-Hemolytic Streptococci*

	Group B1			Group B2		
	Type 3	Type 17	Type 19 + ANCT	Type 3	Type 17	Type 19 + ANCT
Total cases	7	13	14	9	10	13
Cases giving poor response	1	5	3	8	7	5
Cases giving complications	0	5	3	1	2	5

Table 10 shows the number of times each type of group A beta-hemolytic streptococci was recovered from groups B1 and B2 and the cases of each type which gave poor response to treatment and those which presented complications.

It is noteworthy that in the patients harboring type 3 streptococci the convalescent serum called new was much less effective in evoking a good treatment response than was the convalescent serum called old. Table 9 gives the incidence of type 3 streptococci in the source of the new serum. There are no other trends indicating type specificity of the convalescent serum in these results.

No correlation between the type of streptococci recovered from the throats of these patients and the occurrence of complication can be demonstrated in a study of individual records.

COMMENT

It would be highly desirable to use convalescent scarlet fever serum of known antibody titer. Until practical methods of determining this titer are developed, care should be taken that the source of the serum is bacteriologically similar to the group of patients receiving it.

During an epidemic or endemic of scarlet fever, repeated determination of the predominant types of streptococci present is important so that the therapeutic susceptibility of these organisms can be estimated once or twice each week.

It is dangerous and absurd to use the sulfonamide drugs for patients infected with sulfonamide resistant organisms, since numerous severe reactions have been observed leading to prolonged morbidity and occasionally permanent damage to the patient. Fever and toxic signs from administration of sulfonamide drugs frequently cloud the clinical picture and make evaluation of the course of the disease difficult. Furthermore, rashes from sulfonamide drugs (and other "innocuous" preparations such as A. P. C. Tabs) are frequently confused with scarlet fever during an epidemic. This makes prolonged and at times injurious observation necessary by the contagious disease section of a hospital in order to prevent errors in diagnosis and grouping of patients.

In general the patients seen during June and July 1945 had a milder form of the disease than those seen at the height of the epidemic in March and April 1945.

SUMMARY

The degree of toxemia of scarlet fever varies greatly; therefore the toxemic state of the patient is not an indication for or against the diagnosis.

Fifty to 60 per cent of the cases of scarlet fever seen here during June and July 1945 were caused by group A beta-hemolytic streptococci types 3, 17 and 19. Since these types were persistently sulfonamide resistant in laboratory tests, the use of sulfadiazine in treatment of these patients was contraindicated.

The response to treatment of scarlet fever with convalescent scarlet fever serum alone was roughly proportional to the degree of toxemia on admission and was not satisfactory.

The response to treatment of scarlet fever with convalescent scarlet fever serum plus penicillin is much better than that with convalescent serum alone or antistreptococcus serum alone, regardless of the severity of the illness as interpreted by the numerical evaluation of the toxemia. The response to the treatment of scarlet fever with antistreptococcus serum was better than that with convalescent serum in this study, but when the difference in the calculated toxemia of the groups is considered the difference in response assumes less significance. In view of the work of Rothbard (to be published) concerning the higher titer of antibodies in convalescent serum drawn on the thirty-fifth day, it would be valuable to compare the antistreptococcus serum with convalescent serum drawn at the later date. The response to the treatment of scarlet fever with convalescent serum alone is better when the streptococcus type incidence in the source group for the convalescent serum is similar to that of the group treated. Immediate reactions to the intravenous administration of antistreptococcus serum (derived from horses) was much more frequent than immediate reactions to the intravenous administration of convalescent serum. The incidence of complications in scarlet fever treated with convalescent serum alone or antistreptococcus serum alone was roughly proportional to the toxemia on admission.

The incidence of complications in scarlet fever treated with antistreptococcus serum alone was considerably less than that with convalescent serum alone, but when the difference in toxemia of the groups is considered this difference in complications assumes less significance. The incidence of complications in scarlet fever treated with convalescent serum plus penicillin was much less than that in patients treated with convalescent serum or antistreptococcus serum alone, regardless of the toxemia on admission.

A study of individual records in this series indicates that the incidence of rheumatic fever as a complication of scarlet fever has no relation to the toxemia on admission or the type of organism present in the throat during the initial stages of the scarlet fever. There was no correlation between the complications and the type of streptococcus present in the throat during the initial stages of the scarlet fever.

CONCLUSION

Human convalescent scarlet fever serum intravenously administered 50 cc. or more (depending on the toxemia) within twenty-four hours of the appearance of the rash, together with penicillin 30,000 units intramuscularly on admission and 15,000 units every three hours until the temperature has been normal for five days, is the treatment of choice for scarlet fever indicated by this study.

American Animal Psychology.—Perhaps the most impressive contribution of the early postwar period of World War I was the great fund of evidence derived through research on the developmental aspects of behavior and the genesis of behavior patterns. This trend toward a dynamic theory of animal personality led not only to searching out the nature of ontogenetic behavior changes in many animals from the early embryonic stages but also to special investigations of "native" factors in behavior. This work has continued in many laboratories, with real progress toward clarifying the problems of adaptive behavior. Unfortunately in recent years, with increasing emphasis on the intensive investigation of adult behavior patterns, there has been a swing away from interest in the genesis of individual behavior. There is however an underlying tendency in American animal psychology to give ontogeny its due, and it may well be that a resurgence of this important factor in the earlier development of the field will account for important postwar metamorphoses. Perhaps through such changes in the coming years animal psychology may at length graduate to the status of "comparative psychology."—Schneirla, T. C.: Ant Learning as a Problem in Comparative Psychology, in Twentieth Century Psychology, New York, Philosophical Library, 1946.

AN UNUSUAL LICHENOID DERMATOSIS

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Never before in the history of dermatology have there been so many people affected with lichenoid lesions as there have been in the South Pacific Theater of War and other allied areas. Hundreds of individuals have been returned to the Zone of Interior with this cutaneous disorder and hundreds still remain there. Those who have seen the disease both in that area and in the United States are immediately struck with the fact that, though many of the lesions are typical of hypertrophic lichen planus, in many respects the disease is entirely different from any type heretofore described. Despite the doubts in the mind of some as to the common basis of the lesions, there is no question (fig. 1) that the distribution of many of these lesions are the same. They affect the mucous membranes in the same way and are associated with the same identical pruritus, but they appear to be less orderly and of a wider nature. Clinically, as well as geographically, these lesions are exotic.

This unusual dermatosis presents itself in three different phases. So variable are its clinical manifestations that numerous and varied diagnoses are suggested both early and late.

(*a*) *Dermatitis Phase* (fig. 2).—The patient, as a rule, states that at first areas of erythema with small pruritic pustules have been seen on the dorsum of the feet, hands, forearms and legs. These remain for varying periods of time and are often treated with some type of lotion or salve. Following this initial state, one or two things happens: Either discrete verrucous and papulosquamous lesions or an exfoliating dermatitis develops.

(*b*) *Exfoliating Dermatitis Phase.*—The patients seen in this phase are extremely ill, usually having low grade to definite fever, loss of appetite and pronounced loss in weight. The skin is scaling and weeping from the top of the head to the bottom of the feet; the lymph glands are greatly enlarged and a foul odor is present. (I have never seen any of these patients die, but death has occurred, and on admission to this hospital several have been placed on the seriously ill list.)

(*c*) *Lichenoid Phase.*—It is at this time that the lichenoid lesions similar to hypertrophic lichen planus arise, and these can be seen on almost any part of the body, though certain areas are more severely affected than others. The lesions are very prominent on the flexor surfaces of the arms, the inner aspects of the thighs, the buttocks and the dorsum of the hands and feet. The type of lesion is for the most part similar to the hypertrophic type of lichen planus rather than to the polygonal umbilicated papulosquamous lesions so aptly described by Erasmus Wilson almost a century ago. I have never seen a classic lichen planus papule with Wickham's striae in an original case. Such a lesion has been seen, however, in 3 relapsing patients, all of whom had been in this country six months or more after returning from the Pacific areas and India. The lesions are a deep purple red, which in many instances deepens as treatment progresses. Again differing from the usual lichen planus, this disease more conspicuously affects the face, especially the eyelids and ears. As it subsides the definite erythema ab igne appearance of the eyelids is seen. This becomes so striking that after one has seen a number of cases the diagnosis of lichenoid dermatitis is immediately suggested on seeing the patient's eyelids. The axillary, pubic and perianal areas are often involved and commonly weep, thus leading to secondary infection, with resulting confusion in diagnosis. The elbows and knees are similarly affected, so that oftentimes a casual glance could easily lead to the diagnosis of psoriasis vulgaris. Later the lesions become either pigmented or depigmented, depending on the reaction of the individual. The deeply pigmented lesions which appear on the face, arms and legs are strongly suggestive of a grouped pigmented syphiloderm (figs. 3 and 4) and have so been called. Again the pigmentation may be so generalized and the lesions so verrucoid that the possibility of Darier's disease, urticaria pigmentosum, and even acanthosis nigricans has been suggested. Some of the lesions assume polycyclic and orbicular forms on the body and extremities and to the uninitiated look like

Fig. 1.—Lichenoid lesions involving the wrists.

tinea corporis. The depigmented areas may coalesce and strange and bizarre appearances result (fig. 5).

The mucous membranes of the mouth (fig. 6), lips, penis and vulva are definitely affected, and lesions have been present in these areas in 12 of the 60 cases. Since the eruption was so wild in its nature, it seemed likely that proctoscopy [1] and gastroscopy might reveal further involvement. A large number of these cases were examined, and the most striking lichen planus lesions that I have ever seen on the mucous membranes were present on the rectum in 3 of the 20 cases so studied to date. These occurred on the columns of Morgagni but never in the crypts. They were usually 1 cm. or more above the anocutaneous junction but never in the sigmoid colon. A typical description of these lesions was presented as follows:

External examination: The perianal region is covered with confluent and discrete lesions which are consistent with lichen planus. There is a chronic anal ulcer in the posterior commissure. There is no evidence of fistula, external hemorrhoids or pilonidal sinus.

Digital: Sphincter tone is normal. The prostate is normal in size and shape. The rectal mucous membrane is smooth.

From the Oliver General Hospital, Augusta, Ga.
Pfc. John H. MacDonald photographed the patients.
Col. Hew B. McMurdo, M. C., commanding officer, Oliver General Hospital, and Col. Arthur N. Ferguson, M. C., chief of medical service, cooperated in making this study possible.

1. The proctoscopies and gastroscopies were done by Major Jack S. Goltman, M. C., A. U. S.

Anoscopic: There are no internal hemorrhoids. The rectal columns on the anterior and lateral walls show a grayish white mucosal alteration which has the appearance of an artificially appliqued material. This does not wipe off or bleed when swabbed with an applicator. The lesion begins at the pectinate line and extends along the column, but not into the crypts, for a depth of 1.5 cm.

Proctoscopy: Long instrument passed full length. There are no lesions above the terminal rectum. Vascular markings are distinct.

To date no lesions have been found in the stomach by gastroscopy. Reexamination of some of these patients showed complete clearing of the lesions following treatment.

Occasional cases were associated with alopecia and, because of pyogenic infection of the scalp, presented a varied and sometimes bizarre appearance. The palms and soles (figs. 7 and 8) were frequently involved; over 75 per cent of the cases showed lesions of the nails. One of the most typical findings was the scaling débris beneath the terminal end of the nails, which was often so thick that they were raised from their beds. There were also numerous pitted and lusterless areas of the nails similar to and at times indistinguishable from those often seen in psoriasis vulgaris. Occasionally subungual raindrop pigmentation was seen. In the more severe cases one half to two thirds of the nail was destroyed or had become so brittle that it could be easily removed.

Fig. 2.—Typical lichenoid lesions of dorsum of feet with nail involvement.

ETIOLOGY

The most interesting question that immediately suggests itself is Why is this disease so common in the South Pacific and climatically similar areas but so uncommon in the other theaters of war? The same kind of people are fighting and the war is just as intense in the Euorpean theater as in the Pacific. Sir Graham Little [2] stated that MacCormack, in charge of a large base hospital for skin diseases in World War I, found lichen planus extremely rare and not increased in the military or civilian population. He did state, however, that prior to the war he had seen numerous instances of the disease following scratch marks and wounds. The latter statement is pertinent, as will be seen, to a consideration of some of the cases in the South Pacific. In a report covering over 2,000 dermatologic cases among soldiers in World War I, Guy [3] found only 1 instance of lichen planus.

Fig. 3.—Grouped pigmented lesions resembling a grouped pigmented syphiloderm.

The question of drug idiosyncrasy arises, and one must consider atabrine, used by hundreds of thousands in the Pacific Theater of War as well as in other areas. It has been shown by observers that atabrine is capable of producing skin reactions, as in the interesting reports by Noogin and Calloway,[4] Nayudu [5] and Storey.[6] In none of these patients were lichen planus-like lesions found, but severe exfoliating dermatitis was described. Lichenoid lesions such as those described earlier in this paper, have been known to occur in drug eruptions caused by arsenic, bismuth and bromides, so that the thought that atabrine might cause this unusual dermatosis is not improbable. I have been unable to reproduce these lesions, however, in the cases observed and treated by suppressive or intensive therapy with atabrine. All these were maintained on suppressive atabrine therapy while they were being treated, and in no instance did any new lesions appear while under observation. It is true, however, that some of the hypertrophic lesions would weep, but this could readily

2. Little, E. Graham: Lichen Planus, J. Cutan. Dis. **37**: 639 (Oct.) 1919.

3. Guy, W. H.: Dermatology in the Army, J. Cutan. Dis. **37**: 245 (April) 1919.

4. Noogin, R. O., and Calloway, J. L.: Generalized Exfoliating Erythroderma Following Atabrine: Report of a Case, North Carolina M. J. **3**: 239 (May) 1942.

5. Nayudu, R. V. N.: Malaria and Its Treatment by Synthetic Remedies Atabrine and Plasmochin, Indian M. Gaz. **72**: 531 (Sept.) 1937.

6. Storey, W. E.: Toxic Exanthema Following Prolonged Atabrine Administration and Resembling Brill's Typhus Fever: Report of Case, J. M. A. Georgia **27**: 317 (Aug.) 1938.

have been a reaction to local treatment even though it was mild, because the skins of many of these patients were extremely sensitive. Several patients developed their first attacks of malaria or relapsed while in this hospital and were treated with intensive atabrine therapy, but there was no aggravation of their skin lesions. One patient in particular, with severe exfoliating dermatitis plus his lichenoid lesions, has been observed for eight months, during which time he has been receiving continuous suppressive atabrine therapy; he has recovered except for scattered sepia brown pigmentation. Patch and intradermal tests with atabrine were done in a few of these patients and all were found to be negative. No passive transfer tests were made.

Two patients developed severe otitis media and 1 a virulent Vincent's infection of the throat with definite flare-up of the skin lesions after sulfonamide therapy. This suggests to some extent a pyogenic or allergic background. Although atabrine may be a definite causal factor or an agent that prepares the soil, more evidence will have to be uncovered before it can be pinned down as the exclusive and certain etiologic factor. It is quite possible that even if atabrine is a cause of this cutaneous disorder the classical geographic sites such as New Guinea and Burma and similar areas may provide other necessary factors. It may be of value to examine a large number of natives in typical geographic areas where lichenoid lesions have been found to be prevalent and note whether they have or have had similar eruptions. Future study will undoubtedly answer the question whether this is true sensitivity to the drug or a toxic effect related to the amount ingested.

Fig. 4.—Grouped pigmented lesions resembling a grouped pigmented syphiloderm.

Malnutriton must also be considered as a possible etiologic factor. The only patients that showed loss of weight and poor general health were those in the exfoliating phase, a nonspecific effect. It was striking that practically all the patients in the lichenoid phase of the disease were well nourished. Nevertheless the fact that they were not receiving fresh vegetables and were on rationed diets may be significant.

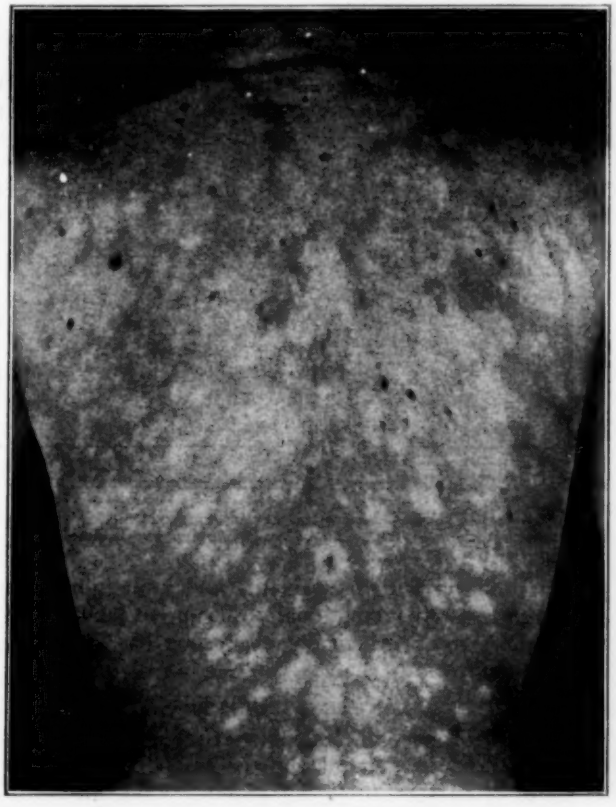

Fig. 5.—Typical depigmented lesions.

Since the eruption is common on the face and dorsum of the hands, the possibility of light sensitivity should be considered, particularly in view of the relation between light sensitization and infection. To some extent the pigmentation of the skin caused by atabrine may even protect individuals from the sunlight—an interesting possibility deserving further study.

The reported small incidence of lichen planus in World War I would at first glance tend to minimize an emotional or neurophysiovascular mechanism as the cause of this unusual dermatosis. All types of people have been affected: combat soldiers, general staff officers, doctors, nurses, Wacs and soldiers doing routine tasks in no way associated with active combat duty. Many of these cases were from New Guinea, Biak and Morotai, where there had been beach landings, invasions and heavy battle casualties. When one considers that this environment is totally different from that ever experienced by the military personnel transported here, away from their conditoned civilization and in stations where the sexes have been isolated from each other, the possible emotional etiology appears more significant. The nature of the weather, its rain and constant humidity, the mud, the jungle with its "routine diet" of trees and underbrush and its almost total isolation from the rest of the world increasingly suggest a large emotional factor. Virtually every patient affected with this dermatosis as seen here had severe hyperhidrosis of the palms and soles—a disturbance

2. Little, E. Graham: Lichen Planus, J. Cutan. Dis. **37**: 639 (Oct.) 1919.

Administration and Resembling Brill's Typhus Fever: Report of Case, J. M. A. Georgia **27**: 317 (Aug.) 1938.

long known to be associated with neurophysiovascular imbalance. Some of those affected by this eruption are said to have anhidrosis at the start of their disease, but this symptom has as yet not been observed here. In addition, there is the added factor of infection caused by scratches, infected bites, wounds, ulcerations, the ever

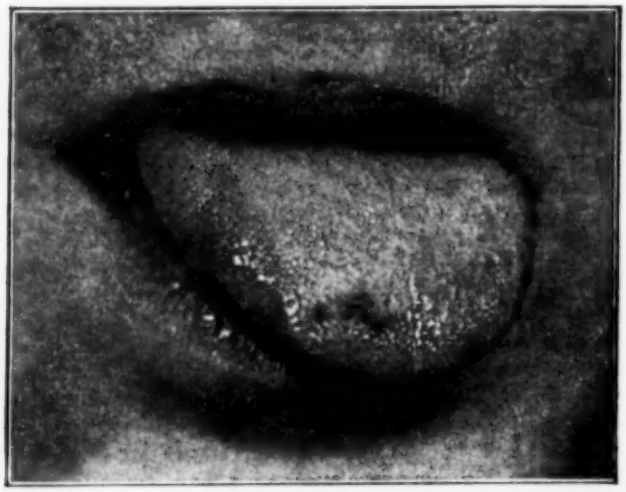

Fig. 6.—Lichen planus-like lesions of the tongue which disappeared after four injections of 0.02 Gm. of oxophenarsine hydrochloride.

present miliaria with its pruritus and impetiginization, and countless other emotionally disruptive factors. As the soldiers say, "practically every one has jungle rot in New Guinea."

MINUTE STRUCTURE

Biopsies of several lesions were examined microscopically and in general showed the changes similar to those often seen in lichen planus. One interesting finding was an increased pigmentation in the corium in the pigmented type of lichen planus. In 1 instance a lymph gland from such a case was examined and pigmented granules were seen throughout the stroma.

Fig. 7.—Lichenoid lesions of the heels.

LABORATORY DATA

Routine laboratory studies revealed no specific findings. There were occasional increases in the eosinophils, but this is not uncommon in patients returning from the Pacific. None of the patients showed blood findings that were compatible with hemopoietic change, and in the few cases that were examined for hepatic pathologic change none was found. No false biologic reactions were noted. Sedimentation rates by the Wintrobe method were elevated in 70 per cent of the patients with eczematous lesions and in all of the exfoliating cases.

TREATMENT OF THIS DERMATITIS

The treatment of this eruption will vary according to the phase of the disease.

(*a*) *Treatment of Dermatitis Phase.*—Since I treated all these cases in the Zone of the Interior, the dermatitis phase offered no great problem because of its infrequency. The skin of these patients, it was seen, was extremely sensitive, so that even the mildest substances were irritative. For this reason treatment had to be individualized. The salves and lotions used were in all instances very mild and when applied were covered with bandages which were not removed for twenty-four hours unless unfavorable reactions had occurred.

(*b*) *Treatment of Exfoliating Phase.*—In general the exfoliating cases were treated by the usual methods employed in any exfoliating dermatitis.

Fig. 8.—Lichenoid lesions of the palms.

1. Continuous local wet dressings were used. Potassium permanganate in 1:5,000 dilution was the drug of choice. The dressings were applied over the entire body if necessary; they were then covered with towels which were fastened with safety pins. This form of therapy was usually continued day and night until the oozing, weeping and secondary infection had been controlled.

2. Sulfonamides were never used.

3. High caloric diets were given with added vitamin medication. Crude liver extracts in 2 to 5 cc. doses were given intramuscularly either every day or every other day as indicated. Amino acids were given orally in large amounts.

4. Colloid baths were made up of cornstarch and baking soda if and when the patient was ambulatory.

During this exfoliative phase no specific treatment was administered.

(*c*) *Treatment for the Lichenoid Phase.*—Arsenic in various forms has been used in the treatment of lichen planus for many years. Because of its occasional successes a system of treatment was developed employing an arsenical. Oxophenarsine hydrochloride (Maphar-

etiologic factor. The only patients that showed loss

hyperhidrosis of the palms and soles—a disturbance

sen) was given in small doses, 0.02 Gm. biweekly. To date 60 patients have been so treated,[7] and in some the results have been excellent (figs. 9 and 10), with involution even after four injections. Most of the patients showed improvement with decreased pruritus between the first and the third injections. The mucous

Fig. 9.—Lichenoid lesions of the buttocks of five months' duration.

membrane lesions shared in this response, and in 1 case (fig. 6) with a large plaque on the dorsum of the tongue the lesion disappeared after the fourth injection of oxophenarsine hydrochloride.

Although this treatment is admittedly empirical, the encouraging results warrant its future use in the treatment of true lichen planus as well. If successful, such effects as we have seen in our group of cases would be a far cry from the day when White[8] stated that "cure seems to depend largely on natural evolution."

Several of these patients treated with oxophenarsine hydrochloride developed fever ranging from 99.8 to 102 F. about six hours after the first injection, and for this reason the drug had to be discontinued. Although none of these patients had shown any clinical or laboratory evidence of hepatic damage on admission, it was felt that they had a subthreshold hepatitis which was activated by these small doses of oxophenarsine hydrochloride and which might well have been caused by atabrine. Their icterus indexes were definitely raised, and some developed clinical jaundice as evidenced by scleral changes. These reactions subsided in forty-eight to seventy-two hours, during which time the patients suffered nausea and vomiting. This was relieved by the administration of 1,000 cc. of 10 per cent glucose intravenously and the generous use of amino acids by oral administration. Although it appeared that these patients took longer to get well than those who tolerated the oxophenarsine hydrochloride this was a warning that the drug should be used cautiously and discretely, if at all, in treating patients with "exotic lichen planus."

Previous to hospitalization here, many of these patients had received penicillin in large amounts, both intramuscularly and locally, without benefit, except to control secondary infection. Many also had received sulfonamides, both internally and locally, with no real gain and even with occasional harm.

COMMENT AND SUMMARY

This paper deals with a large number of cases of an unusual lichenoid and exfoliating eruption returned because of this disease, to the Zone of the Interior from the South Pacific Theater of Operations and geographically similar areas. The distribution and character of the lesions usually indicated the correct diagnosis. The most common single finding was a hypertrophic erythematopapulosquamous lesion with a tendency toward confluence. At no time was a classic lichen planus papule seen in an early case. The eruption was "exotic" in character and commonly involved areas not usually affected in true lichen planus: i. e. the scalp, eyelids, face, palms, soles and nails. The mucous membranes, genitalia and anal areas were involved in 20 per cent of the cases. Proctoscopy has revealed in 10 per cent of the cases examined appliqued lesions on the columns of Morgagni but not in the crypts. To date gastroscopy has not demonstrated any lesions. Many of the patients responded well to 0.02 Gm. of oxophenarsine hydrochloride given biweekly. These improvements occurred between the first and third injections; in no case were more than ten injections necessary to bring about involution of the lesions.

The pigmentation resulting from the eruption remained for long periods of time. Depigmented types of lesions were unchanged by treatment. Mucous membrane lesions responded promptly, and in 1 case a large plaque on the tongue cleared after four injections of 0.02 Gm. of oxophenarsine hydrochloride. Several of the patients treated with oxophenarsine hydrochloride developed fever, nausea and vomiting about six hours after the first injection of 0.02 Gm., suggesting the association of hepatic damage in these patients easily exacerbated by this drug and very likely first caused by atabrine. Oxophenarsine hydrochloride

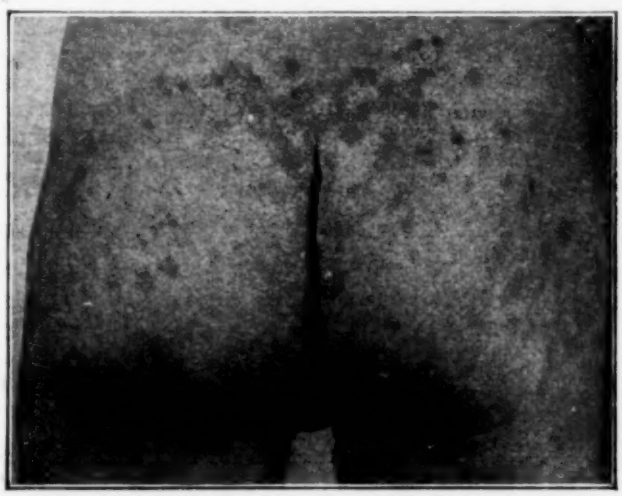

Fig. 10.—Same case as in figure 9 after four injections of 0.02 Gm. of oxophenarsine hydrochloride and ten days after therapy.

should be used with great discretion, if it is used, in treating patients with this eruption.

Patch and intradermal tests with atabrine when done were found to be negative. No passive transfer tests were made. No false biologic reactions were noted, and in none of the cases in this series were changes in the hemopoietic system found. Sedimentation rates by

7. Since this paper was written, in February 1945, 63 more of these cases have been seen. Of the total of 123 cases, 1 came from North Africa, 4 from India and the remainder from central and northern New Guinea. More recently several soldiers returned from India were found to be afflicted with this unusual dermatosis. In all those from India, atabrine had been stopped at the first symptom of the eruption, but it appeared to have progressed nevertheless, along with symptoms of pruritus. Twelve of the total of 123 patients were Negroes.

8. White, C. J.: Lichen Planus, J. Cutan. Dis. **37**: 671 (Oct.) 1919.

the Wintrobe method were elevated in 70 per cent of the patients with eczematous lesions and in all the exfoliating cases.

Although the principal purpose of this paper is to describe the unusual features of this perplexing dermatitis, the problem of its etiology excites the interest. Atabrine must be strongly considered, although it caused no exacerbations of the skin lesions when used here as suppressive or intensive therapy for malaria in patients with this disease. The neurophysiovascular mechanism, photosensitivity and infection appear to play roles, as may as yet unknown geographic factors. Notable undernourishment appeared only in the exfoliating cases, which of course is not specific for this disease. Nevertheless, large doses of multivitamin tablets and amino acids were administered in all cases. No definite conclusions could be drawn as to a possible nutritional factor in producing this dermatosis.

EFFECT OF SYNTHETIC LACTOBACILLUS CASEI FACTOR IN TREATMENT OF SPRUE

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and
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In recent years the view that no essential differences exist between tropical and nontropical sprue has become acceptable. Hanes [1] has emphasized this point and has further pointed out the relative frequency of reported instances of this disease from the entire United States and from northern Europe. He reports 66 cases of sprue encountered in the Duke University Hospital during a period of eight years. One hundred and fifty-eight cases of pernicious anemia were admitted during this same period, giving a ratio of 1 patient with sprue to 2.5 cases of pernicious anemia.

The fundamental defect in sprue appears to be impaired absorption of various substances from the gastrointestinal tract, whereby a deficiency of a number of factors may be brought about. Various microorganisms suspected as causal agents in the past have been excluded as playing an etiologic role. The work of Castle, Rhoads and their associates [2] in Puerto Rico did much to evolve concepts of the pathogenesis of sprue. The resemblance of several features of this disease to those seen in pernicious anemia had long been noted. These authors showed that sprue occurred both in patients with and in patients without intrinsic factor in their gastric juice. In the group with intrinsic factor the sprue syndrome was brought about, presumably, by insufficient dietary or extrinsic factor. Analysis of the Puerto Rican diet indicated that a deficiency in extrinsic factor was probably of common occurrence. This is in accord with the occasional observation of response of a patient with sprue to a full diet. The similarity to pernicious anemia was further indicated by the demonstration that the liver of a patient dying of untreated sprue contained no erythrocyte maturating factor. Furthermore, in those patients with sprue who were anemic the bone marrow characteristically showed the megaloblastic arrest typical of that seen in pernicious anemia in relapse. Finally, the glossitis of sprue and the glossitis of pernicious anemia are indistinguishable.

Liver extract effective in the treatment of pernicious anemia has been found to be effective in the treatment of sprue, although the response in the latter disease is often less complete and more liver extract may be required for a given response than in pernicious anemia.[2] Indeed, Hanes [1] found 4 of his 66 cases of sprue to be refractory to even very large doses of liver extract administered parenterally.

Criteria generally accepted for the diagnosis of sprue are glossitis, diarrhea with increased fat in the stools, loss of weight, pigmentation of the skin, macrocytic anemia, moderate leukopenia, impairment of absorption as indicated by a flat oral glucose tolerance curve and vitamin A tolerance curve, a very low serum carotene and a characteristic gastrointestinal pattern on x-ray examination. As mentioned previously, some of these findings may be lacking.

Effective treatment of sprue with liver extract and improved dietary results in improvement in the majority of symptoms and findings. The glossitis is relieved within a few days, and evidence of papillary regeneration is noted a day or so later. The diarrhea usually ceases within a week. Flatulence and other gastrointestinal symptoms are usually controlled promptly. Hematologic improvement is rapid. Glucose tolerance curves become more nearly normal within a few weeks. The changes in vitamin A absorption and in serum carotene values following treatment occur slowly, if at all. Weight gain is rapid and is associated with an almost insatiable demand for food.

There has been described a deficiency syndrome in the monkey which is characterized by anemia, leukopenia, diarrhea, oral lesions, facial edema, weight loss and death.[3] The organic factor(s) required by the monkey to prevent this deficiency disease was differentiated from nicotinic acid, riboflavin and thiamine and was named vitamin M.[4] Vitamin M was found in crude liver extracts and in yeast. Further studies have shown that this essential factor is different from a large group of well recognized members of the vitamin B complex including pantothenic acid, choline, para-aminobenzoic acid, pyridoxine and inositol.[5] Day and his co-workers [6] have recently demonstrated that vitamin M deficient monkeys respond to the intramuscular administration of small quantities of a highly purified Lactobacillus casei factor. It is of interest

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Dr. Stanton M. Hardy, medical director of the Lederle Laboratories, furnished generous supplies of crystalline synthetic "folic acid" used in these studies.

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6. Day, P. L., and others: The Successful Treatment of Vitamin M Deficiency in the Monkey with Highly Purified Lactobacillus Casei Factor, J. Biol. Chem. **157**: 423 (Jan.) 1945. Day, P. L.; Mims, Virginia, and Totter, J. R.: The Relationship Between Vitamin M and the Lactobacillus Casei Factor, ibid. **161**: 45 (Nov.) 1945.

that doses of certain purified liver extracts which were effective in the treatment of pernicious anemia were not effective in the prevention of the nutritional cytopenia in the monkey. Finally, vitamin M deficiency developed in monkeys fed the Goldberger blacktongue producing diet,[7] a diet on which Miller and Rhoads[8] found that pigs lost intrinsic factor from gastric juice and maturating factor from the liver.

The association of diarrhea and dysentery in the monkey with this deficiency has frequently been commented on.[9] The various similarities of vitamin M deficiency in the monkey to the sprue syndrome in man has led us to test the efficacy of the newly synthesized L. casei factor[10] in the treatment of 3 cases of this disease. The rapid clinical and hematologic responses which have followed the administration of this pure synthetic material have been briefly reported elsewhere in preliminary notes.[11] It is our purpose in the present communication[12] to describe these cases in detail and to present additional data obtained during the period of several weeks of observation of these patients. It appears that the response to this single factor has been as complete as is ordinarily experienced following the use of liver extract.

The patients whose courses are described here were maintained throughout their hospital stay on regular ward diets but devoid of organ meats. Patient 3 received no meat products in any form during his hospital course. The crystalline L. casei factor was prepared for injection by dissolving it in distilled water (15 mg. in 3 cc.) by the addition of a minimal quantity of disodium phosphate, and this solution was autoclaved at 10 pounds pressure for fifteen minutes. Fresh solutions were prepared at three day intervals.

The vitamin B complex excretion studies reported were determinations of thiamine (thiachrome procedure), riboflavin (fluorometric method) and N-methylnicotinamide excretion in the urine for a two hour period following oral doses of 5 mg. of thiamine, 5 mg. of riboflavin and 50 mg. of nicotinamide. The vitamin A tolerances were run following a standard oral dose of 200,000 international units of vitamin A.

REPORT OF CASES

CASE 1.—*History.*—A white man aged 51 entered Vanderbilt University Hospital on Sept. 24, 1945 with complaints of sore mouth, diarrhea, weakness and loss of weight over a period of ten months. This had begun rather suddenly, and disability had been progressive. He had lost about 28 pounds (12.7 Kg.) soon after the onset of his complaints; in the four weeks prior to admission he had lost an additional 10 pounds (4.5 Kg.). He had passed five to seven loose stools daily, most of these during the night. The stools were described as white or light yellow. No foul odor had been noted from them. He had observed gradually deepening brown pigmentation of exposed areas of his skin. Blisters had initiated the complaint of sore mouth early in his illness. These had disappeared shortly, leaving him with a diffusely sore tongue. His appetite had been poor throughout his illness, but there had been apparently little, if any, qualitative changes in his diet. For six weeks prior to admission he had taken 2 quarts of milk and 6 eggs daily. Much flatulence and belching had occurred during his illness. Slight swelling of the legs and feet had been noted occasionally. The past history revealed nothing relevant. He had had good health until the onset of his present illness.

Physical Examination.—The patient was emaciated and weighed 107 pounds (48.5 Kg.). The mucous membranes were pale. The skin of the face, neck, hands and feet was deep brown. No pigmentation was observed on any mucous surfaces. The tongue was diffusely red, smooth and glistening (fig. 1). No lymph node enlargement was noted. The chest was barrel shaped and moved poorly. Inconstant squeaks were heard over the lung fields, mostly at the bases. The heart showed nothing of note. The blood pressure was 90/50. Nothing abnormal was noted on examination of the abdomen. The liver and spleen were not felt. There was slight pitting edema of the ankles. The knee and ankle jerks were normally active, and there was no impairment of the vibratory sense.

FIG. 1 (case 1).—Appearance of tongue (*A*) before treatment; (*B*) three weeks after first treatment. Papillary regeneration of about this extent had been apparent approximately two weeks earlier.

Laboratory Examination.—The urine was negative for albumin and sugar on two occasions, with specific gravities of 1.013 and 1.018 respectively. Nothing of significance was found in the sediment. The urine was not tested for urobilinogen. Values for red and white blood cells, reticulocytes, packed cell volume and hemoglobin are given in figure 2. Differential count of the white blood cells showed 59 per cent segmented neutrophils, 2 per cent juveniles, 35 per cent lymphocytes and 4 per cent monocytes. No increased segmentation of the neutrophils was noted. The red blood cells generally appeared large and showed considerable variation in size and shape. Platelets appeared slightly reduced in number on the smear. Gastric analysis showed 10 degrees of free hydrochloric acid after administration of 50 cc. of 7 per cent ethyl alcohol. The serum icterus index was 6. Total serum proteins were 5.21 Gm. per hundred cubic centimeters, with 3.36 Gm. of albumin. The serum calcium was 8.8 mg. per hundred cubic centimeters. Serum phosphorus was 3.7 mg. per hundred cubic centimeters. An uptake of 5.5 per cent radioactive ferrous iron was found with a dose given one day after treatment was begun. The stools were light yellow to brown and were not foamy or foul smelling. When rubbed between the fingers they had the consistency of cold cream. No parasites or ova were found. The guaiac test was negative for blood. On staining with sudan III three stool specimens were said to show no increased amount of fat. Chemical analysis on two occasions showed fat to comprise 37 per cent and 44 per cent of the dry weight of the stools respectively. The total nitrogen

7. Day, P. L.; Langston, W. C.; Darby, W. J.; Wahlin, J. G., and Mims, Virginia: Nutritional Cytopenia in Monkeys Receiving the Goldberger Diet, J. Exper. Med. **72**: 463 (Oct.) 1940.

8. Miller, D. K., and Rhoads, C. P.: The Experimental Production of Loss of Hematopoietic Elements of the Gastric Secretion and of the Liver in Swine with Achlorhydria and Anemia, J. Clin. Investigation **14**: 153 (March) 1935.

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10. Angier, R. B., and others: Synthesis of a Compound Identical with the L. Casei Factor Isolated from Liver, Science **102**: 227 (Aug. 31) 1945.

11. Darby, W. J., and Jones, E.: The Treatment of Sprue with Synthetic L. Casei Factor (Folic Acid, Vitamin M), Proc. Soc. Exper. Biol. & Med. **60**: 259 (Nov.) 1945. Darby, Jones and Johnson.[24]

12. A vast literature has accumulated on the hemopoietic activity in chicks and in rats treated with sulfonamide drugs of a number of compounds which have been variously termed Be, Be-conjugate, L. casei factors (of which there are at least three), "folic acid," factors U and R, and the like. It is not our purpose in this paper to review the interrelationships of these factors. For recent summaries of the problem the reader is referred to the following reviews: Wieder, S.: The Present Status of Lactobacillus Casei Factor, Pearl River, Lederle Laboratories, Inc., June, 1944. Daft, C. F. S., and Sebrell, W. H.: Sulfonamides and Vitamin Deficiencies, Vitamins and Hormones **3**: 60, 1945. Day, P. L., and Totter, J. R.: The Bioassay of the Factor Variously Called Vitamin M, Factor U, Vitamin Be, Norite Eluate Factor, Folic Acid, and Lactobacillus Casei Factor, Biological Symposia, to be published. Anonymous: Some Relations of Vitamin Be-Conjugate, Nutrition Rev. **4**: 15 (Jan.) 1946. Anonymous: Some Clinical Investigations with Isolated and Synthetic L. Casei Factors and Related Compounds, ibid. **4**: 11 (Jan.) 1946. Norris, L. C., and Heuser, G. F.: Water Soluble Vitamins, Ann. Rev. Biochem. **14**: 500, 1946.

content of two twenty-four hour stool specimens was 3.91 Gm. and 4.89 Gm. respectively. Results of oral glucose tolerance tests, before and after treatment, are given in figure 3. The vitamin A tolerance curve showed a fasting level of 95 international units per hundred cubic centimeters, at five hours 127 international units and at nine hours 117 international units.

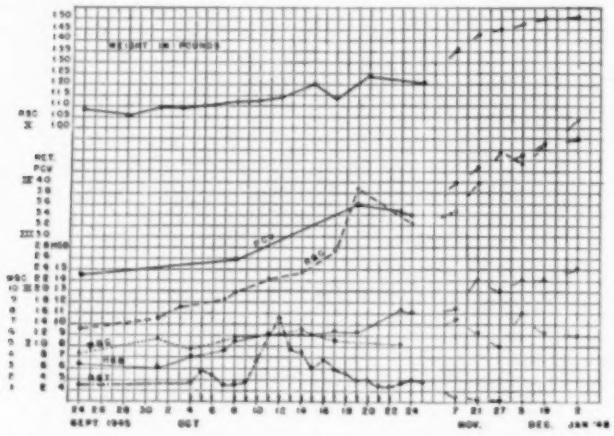

Fig. 2 (case 1).—Hematologic responses. Each upright bar represents the intramuscular injection of 15 mg. of synthetic L. casei factor. Weight changes are shown at top.

Corresponding values for serum carotene ranged from 18 to 21 micrograms per hundred cubic centimeters. B complex excretion tests gave two hour excretion values of thiamine 0.02 mg., riboflavin 0.58 mg. and N-methylnicotinamide 2.54 mg. Intravenous glucose tolerance tests using 20 Gm. of glucose gave the following values: fasting, 90 mg. per hundred cubic centimeters; five minutes, 194 mg. per hundred cubic centimeters; fifteen minutes, 144 mg. per hundred cubic centimeters; thirty minutes, 84 mg. per hundred cubic centimeters; one hour, 58 mg. per hundred cubic centimeters, and one and one-half hours, 75 mg. per hundred cubic centimeters. X-ray examination of the gastrointestinal tract showed the typical atony of the small intestine with pooling of the barium. An electrocardiogram showed low voltage and isoelectric T waves, interpreted as indicating myocardial disease.

Course.—Beginning on October 4 he was given 15 mg. of synthetic L. casei factor daily for eighteen days by intramuscular injection. Four days after treatment was begun his tongue was no longer sore; the next day evidence of papillary regeneration was present. The hematologic response is given in figure 2. The diarrhea had subsided by eight days after the beginning of treatment. At about this time he developed considerable edema of his feet and legs. This gradually disappeared in four or five days. The blood pressure was 110/74 on the eleventh day of treatment. The pigmentation of the skin gradually decreased. His appetite became excessive and the weight gain was rapid (fig. 2). He appeared quite vigorous and by three months after beginning treatment he had gained 43 pounds (19.5 Kg.).

Serum proteins three weeks after the institution of therapy had increased to a total of 6.77 Gm. per hundred cubic centimeters, with 4.35 Gm. of albumin per hundred cubic centimeters. A stool specimen examined two months after treatment was begun showed 29 per cent of dry weight to be fat. At this same time 137 international units of vitamin A was found in the blood serum; no carotene was present. A second gastrointestinal x-ray examination twelve days after treatment was begun showed no change from that observed before therapy was instituted.

CASE 2.—*History.*—A white woman aged 22 entered Vanderbilt University Hospital on Oct. 15, 1945 complaining chiefly of diarrhea of three months' duration. Five to six stools were passed daily. These were bulky and foul smelling. The color of the stools had varied greatly during her illness. Cramping abdominal pain had occurred usually with each bowel movement. Six weeks after the onset of diarrhea she delivered a full term infant. After delivery she vomited one to two times daily for two weeks and began to lose weight rapidly. The diarrhea persisted until admission to the hospital. She lost from 20 to 25 pounds (9 to 11 Kg.) below her usual nonpregnant weight during this three month period. Weakness had been progressive during this time. She was brought to the hospital by ambulance, being unable to stand. Since her marriage eighteen months before her diet had consisted of jam, hominy and sweet potatoes for breakfast, beans, cabbage and hominy for lunch and beans, cabbage, hominy and occasionally vegetable soup for dinner. Her appetite had become increasingly poor, so that during her pregnancy only small amounts of these foods were eaten. For five weeks prior to admission she had been given by her local physician biweekly injections of considerable amounts of thiamine, niacin, pantothenic acid, riboflavin and pyridoxine without benefit.

Six weeks before admission it was noted that the skin of her arms was darker than normal. She had not been exposed to sunlight. Her tongue became sore three weeks before admission. Her legs had tingled throughout her illness.

Physical Examination.—The patient was small and emaciated and appeared chronically ill. She weighed 64 pounds (29 Kg.). Her skin exhibited dark brown diffuse pigmentation over the hands, wrists and feet. The scleras were faintly icteric. The buccal mucosa was pale. The gums were soft and bled readily. The tongue was pale, with much atrophy of the papillae and areas of redness along the margin. The thyroid was not enlarged. The lungs were clear on physical examination. The heart was not enlarged. A blowing systolic murmur of moderate intensity was heard over the entire precordium. The blood pressure was 95/58. The abdomen was scaphoid. There was no tenderness. The liver and spleen were not palpable. The extremities were quite thin. There was no edema. The knee and ankle jerks were active, and vibratory sense was not impaired.

Laboratory Examination.—At the time of admission the urine showed a trace of albumin and of sugar as the only findings of note. It later became entirely normal. It was not tested for urobilinogen.

The majority of the hematologic findings are shown in figure 4. Differential count of the white blood cells showed 54 per cent segmented neutrophils, 3 per cent stabs, 0.5 per cent eosinophils, 40 per cent lymphocytes, 2 per cent monocytes and 0.5 per cent neutrophilic myelocytes. The red blood cells appeared well stained and generally large, with moderate variation in size and shape. The platelets appeared to be slightly reduced in number on the stained smear. The platelet count was 200,000 per cubic millimeter by an indirect method. Bone marrow obtained by sternal aspiration before treatment showed generalized hyperplasia with many megaloblasts. The serum icterus index was 12. Total serum proteins were 5.59 Gm. per hundred cubic centimeters, with 4.02 Gm. of albumin. The serum calcium was 10.9 mg. per hundred cubic centimeters, the serum phosphorus 4.8 mg. per hundred cubic centimeters. Gastric analysis revealed free hydrochloric acid after injection of histamine. Three and five-tenths per cent of a dose of radioactive ferrous iron was taken up. This dose was given on the day of the first injection of "folic acid."

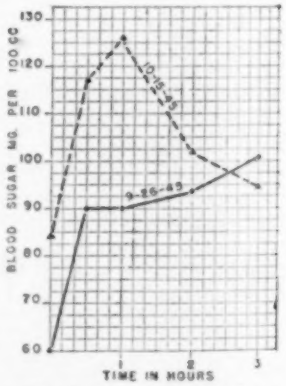

Fig. 3 (case 1).—Oral glucose tolerance curves before and after treatment. Treatment was begun eleven days prior to the second curve.

A small number of hookworm eggs were found in two stool specimens. The stools were light yellow to green and were greasy to touch. Analysis revealed 40 per cent of the dry weight to be fat. The total nitrogen content of a twenty-four hour stool was 2.90 Gm. The guaiac test for blood was negative on three occasions. An oral glucose tolerance test performed before treatment showed a rise of only 23 mg. in a three hour period. Serum carotene was 11.8 micrograms,

per hundred cubic centimeters, serum vitamin A 90 international units, serum vitamin C 0.0 mg. per hundred cubic centimeters. The vitamin A tolerance curve following administration of 200,000 international units of vitamin A was 60 international units fasting, 118 international units at three hours, 686 international units at five hours and 671 international units at

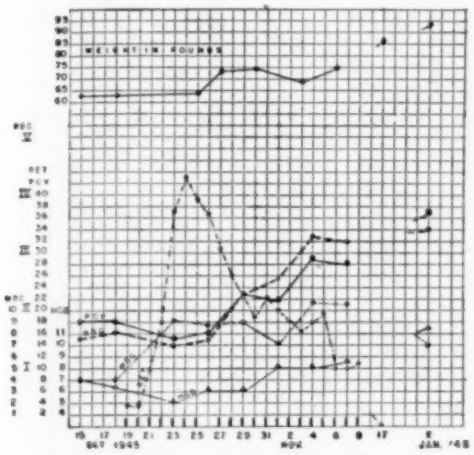

Fig. 4 (case 2).—Hematologic responses. Each upright bar represents the intramuscular injection of 15 mg. of synthetic L. casei factor. Weight changes are shown at top.

nine hours. Serum carotene ranged from 17 to 22 micrograms per hundred cubic centimeters. The vitamin B complex excretion test showed values as follows: thiamine 0.03 mg., riboflavin 0.06 mg. and N-methylnicotinamide 4.84 mg.

Course.—Beginning on October 19 the patient was given 15 mg. of synthetic L. casei factor daily by intramuscular injection for nineteen days. Four days after treatment was begun the soreness of her tongue had disappeared. Papillary regeneration followed rapidly. The hematologic response is shown in figure 4. By the twelfth day of treatment the diarrhea had ceased. There was rapid gain of strength, appetite and weight. After five days of therapy mild generalized edema developed; this lasted a few days and then disappeared. Twenty-nine days after the onset of treatment she weighed 86½ pounds (39 Kg.), a gain of 22½ pounds (10 Kg.) over her admission weight. After five days of treatment the bone marrow showed a predominance of normoblasts; this finding persisted six days later. There was a progressive increase in platelets with treatment until after seven days they had reached a level of approximately 2,000,000 per cubic millimeter (indirect method). They remained at about this level during the next twelve days of observation.

When seen seventy-five days after the first injection of "folic acid" she appeared vigorous and had no complaints. Her weight at this time was 94 pounds (43 Kg.), a gain of 30 pounds (14 Kg.) since the time of admission to the hospital. However, she was found to have a moderate macrocytic anemia at this time. All pigmentation of the skin had disappeared.

CASE 3.—*History.*—A white man aged 67 entered Vanderbilt University Hospital on Nov. 8, 1945 complaining of weakness and diarrhea over a period of several years. He had been admitted to the hospital in 1939, at which time a diagnosis of sprue had been made. All of the findings typical of this disease were present then. He was treated with large doses of liver extract, with a resulting reticulocyte peak of less than 6 per cent when his initial erythrocyte count was 2.62 million per cubic millimeter. There was a gradual increase in red blood cells and hemoglobin, but these never reached a satisfactory level. It was observed that he developed considerable edema of his feet and legs after treatment with liver extract was begun. Six and one-half weeks after this first admission he was readmitted because of increasing anemia, although he had been receiving 100 units of liver extract weekly. On the second admission he responded slowly to treatment with liver extract and transfusions. Between 1939 and the present admission he had received liver extract irregularly, noting, however, that he felt much better when getting it. He had had occasional bouts of diarrhea lasting as long as several weeks. Weight loss had accompanied each bout of diarrhea. His tongue had been sore at intervals. Swelling of his legs occurred intermittently. He had drunk considerable whisky over a period of years but none recently because it burned his mouth and throat. For some time before the present admission he had noted increasing pigmentation of his hands and wrists.

His appetite had remained good. His diet was low in meat and vegetables, however. It consisted mostly of milk (1 quart daily), 2 eggs daily, cereals, syrup, jelly, bread and butter.

Physical Examination.—The patient appeared chronically ill. The skin was somewhat loose, and there was dark brown pigmentation of the hands, forearms, face, neck and ankles. There was slight pallor of the skin and mucous membranes. The scleras did not appear icteric. The tongue was red about the tip, and there was some papillary atrophy along the lateral margins near the tip. Several bright red spots were seen on the soft palate. Small epitrochlear, cervical, axillary and inguinal nodes were palpable. The chest moved poorly and was generally hyperresonant. The breath sounds were heard poorly. The heart was small and quiet. The blood pressure was 110/70. The abdomen was slightly full about the umbilicus. There was no tenderness. The liver and spleen were not felt. There was a hydrocele of the left tunica vaginalis and atrophy of the right testicle. There was no edema of the ankles. The knee and ankle jerks were sluggish. Vibratory sense was diminished over both legs.

Laboratory Examination.—A casual specimen of the urine, which had a specific gravity of 1.028, showed no abnormal constituents. The majority of the hematologic findings are given in figure 5. Differential count of the white blood cells showed 50 per cent segmented neutrophils, 1.5 per cent eosinophils, 3 per cent basophils, 44 per cent lymphocytes and 1.5 per cent monocytes. A slightly increased segmentation of the segmented neutrophils was noted. The red blood cells appeared to be well stained, were predominantly macrocytic and showed moderate variation in size and shape. The bone marrow showed hyperplasia, with many megaloblasts and erythroblasts. Platelets as counted by an indirect method ranged around 200,000 per cubic millimeter. The serum icterus

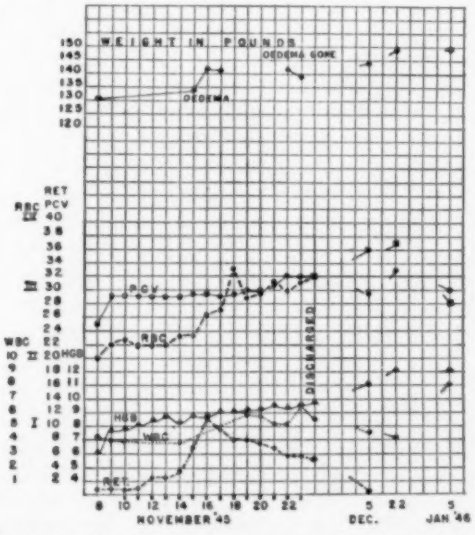

Fig. 5 (case 3).—Hematologic responses. Each upright bar represents the intramuscular injection of 15 mg. of synthetic L. casei factor. Starting on November 23, 5 mg. of this material was given daily by mouth.

index was 3. Serum calcium was 9.7 mg. per hundred cubic centimeters, and serum phosphorus 3.5 mg. Total serum proteins were 5.98 Gm. per hundred cubic centimeters, with 3.79 Gm. of albumin. Gastric analysis revealed free hydrochloric acid without alcohol or histamine stimulation.

Two per cent of a dose of radioactive ferrous iron was taken up, this being given on the day of admission. The stools were chalky white in appearance. No ova or parasites were found. The guaiac test for blood was negative. Analysis of the stool

showed a fat content of 23 per cent dry weight. Total nitrogen of a twenty-four hour stool was 4.11 Gm. Values for oral glucose tolerance curves are given in figure 6. The vitamin A tolerance curve after administration of 200,000 international units of vitamin A showed 119 international units fasting, 127 international units in three hours and 169 international units in five hours. The serum carotene ranged from 18 to 21 micrograms per hundred cubic centimeters. Values shown by vitamin B complex excretion tests were thiamine 0.04 mg., riboflavin 0.32 mg. and N-methylnicotinamide 4.49 mg.

X-ray examination of the gastrointestinal tract showed puddling of barium in the small intestine characteristic of that seen in sprue and other deficiency syndromes.

Course.—Beginning on November 10 the patient was given eighteen injections of 15 mg. of synthetic L. casei factor intramuscularly in a period of fifteen days. He was then given 5 mg. of this material by mouth daily, which he has continued. Soreness of his tongue disappeared after four days of treatment. Papillary regeneration was apparent a few days later. Much edema of his feet and legs was noted on the seventh day of therapy. This subsided in a few days. Ten days after treatment was begun the bone marrow showed normoblasts as the predominant young red blood cells. On the eleventh day of treatment a second vitamin A tolerance curve gave values of 101 international units fasting, 114 international units at three hours, 129 international units at five hours and 133 international units at nine hours. The carotene level ranged from 21 to 25 micrograms per hundred cubic centimeters.

A second x-ray examination of his gastrointestinal tract with a barium meal was made thirteen days after treatment was begun. This showed no change from the earlier findings.

There was a rapid gain in weight, amounting to 8 pounds (3.6 Kg.) during his hospital stay of fourteen days after treatment was begun. When seen forty-two days after his first treatment he had no complaints and appeared vigorous. At this time he had gained 17 pounds (7.7 Kg.) above his hospital admission weight. Serum vitamin A on this date was 89 international units, serum carotene 13 micrograms per hundred cubic centimeters. He said that all oral and substernal soreness had gone and that he could now drink whisky without any sensation of burning.

COMMENT

The pattern of response exhibited by these 3 patients with sprue has been similar, and it resembles in all respects that which follows the administration of an active liver preparation to such persons. Within two or three days after therapy was instituted all 3 patients experienced an improved sense of well being, which was manifested by increased alertness and cheerfulness. The glossitis was relieved on the fourth or fifth day; regeneration of the lingual papillae was obvious on the fifth day. Simultaneously there was cessation of the diarrhea and increased appetite. Weight gains commenced on approximately the fifth to the seventh day of therapy. The initial increases in weight appeared to reflect water retention. They occurred rapidly and were accompanied by demonstrable edema and hemodilution, which disappeared at about the twelfth to the fourteenth day. At the latter time a slight weight loss occurred. Transitory edema appearing in treated cases of nutritional macrocytic anemia at the height of hemopoiesis has been noted by Holmes.[13] The subsidence of this edema has been followed by striking increases in body weight unaccompanied by evidences of water retention. These gains were accompanied by general betterment and an almost insatiable appetite.

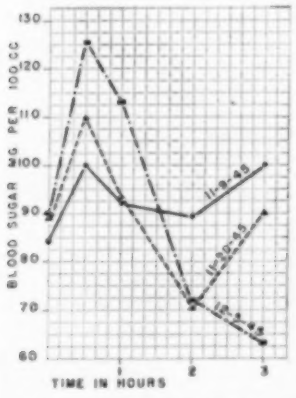

Fig. 6 (case 3).—Oral glucose tolerance curves. First curve made before treatment, second curve ten days after beginning of treatment and third curve twenty-five days after beginning of treatment.

In relation to the gain in weight it is of interest to consider the alterations which were found in the glucose tolerance as indicative of improved absorption. All 3 patients exhibited abnormally flat oral glucose tolerance curves prior to treatment. Intravenous glucose absorption curves run on 2 of the patients were normal. The oral glucose tolerance was repeated on 2 of the patients following therapy. In both instances there was a return to an essentially normal curve after two weeks to a month following the institution of treatment with L. casei factor (figs. 3 and 6). If this abnormality indicates a faulty absorption of glucose in sprue, as is usually held, it would appear that synthetic L. casei factor is capable of correcting this defect in absorption from the gastrointestinal tract. Furthermore, its activity in this respect again resembles that of liver extract as illustrated by case 3 (compare figs. 6 and 7).

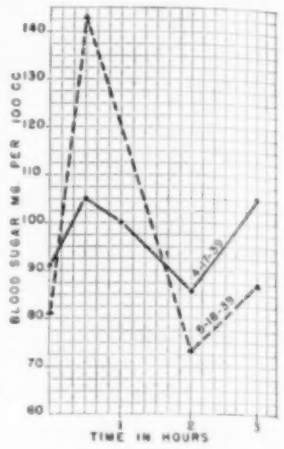

Fig. 7 (case 3).—Oral glucose tolerance curves made before and after treatment with liver extract during first hospital admission in 1939. Second curve twenty-seven days after beginning of treatment.

It is generally assumed that the steatorrhea in sprue is another evidence of impaired absorption,[14] although incontrovertible proof of this assumption has not been provided. It is well recognized that the steatorrhea may persist even after intensive liver therapy which results in a satisfactory clinical response. Neither of the 2 cases which we have followed with repeated stool analyses has shown a return to the normal fat content, although the diarrhea was promptly relieved. Furthermore, these patients have not exhibited an increase in plasma carotene content—another finding consistent with the continued presence of excess fat within the gastrointestinal lumen. Whether the finding of low serum carotene levels in sprue [15] is corrected following liver therapy is not known. It appears logical to expect it to be altered only in those patients in whom the steatorrhea is arrested following therapy, for it has been demonstrated that the continued presence of a nonabsorbed fatlike substance within the intestinal lumen interferes greatly with the absorption of carotene [16] and that carotene absorption is dependent on simultaneous fat absorption.[17] It is of interest that the fat extracted from the stools of our 3 patients was highly colored, with a yellowish red pigment suggesting carotenoid pigments. There has been a rise in serum vitamin A levels in 2 of these patients following therapy,

13. Holmes, E. G.: Observations on Edema Occurring During the Course of Macrocytic Anemia, Brit. M. J. **2**: 561 (Oct. 27) 1945.
14. Thaysen, T. E. H.: Ten Cases of Idiopathic Steatorrhea, Quart. J. Med. **4**: 359 (Oct.) 1935.
15. Cayer, D.; Ruffin, J., and Perlzweig, W. A.: Vitamin Levels in Sprue, Am. J. M. Sc. **210**: 200 (Aug.) 1945.
16. Rowntree, J. I.: The Effect of the Use of Mineral Oil on the Absorption of Vitamin A, J. Nutrition **3**: 345 (Jan.) 1931. Dutcher, R. A.; Harris, P. L.; Hartzler, E. R., and Guerrant, N. B.: Vitamin Studies: XIX. The Assimilation of Carotene and Vitamin A in the Presence of Mineral Oil, ibid. **8**: 269 (Sept.) 1934.
17. Wilson, H. E. C.; Das Gupta, S. M., and Ahmad, B.: Studies on the Absorption of Carotene and Vitamin A in the Human Subject, Indian J. M. Res. **24**: 807 (Jan.) 1937.

and a less abnormal vitamin A tolerance curve has been found. Only 1 (patient 2) has shown an increased serum carotene level. Repeated analyses of the stools of this patient have not been obtained.

The rapid relief of the symptoms of glossitis and the regeneration of the lingual papillae are worthy of comment, since it has been implied that the glossitis in sprue and in pernicious anemia may be due to niacin deficiency.[18] Our experience would indicate that this L. casei factor or some metabolite of it is responsible for the relief of this glossitis.

In our 3 patients treatment has brought about increases in all of the formed elements of the blood, i. e. red cells, white cells and platelets. The changes pertaining to red and white cells are shown in the respective charts. While the blood platelets were not at appreciably low levels before treatment, their approximate tenfold increase following treatment was striking and occurred in all 3 patients. These responses resemble those seen in vitamin M deficient monkeys successfully treated with liver extract, yeast or L. casei factor.[19]

Patient 2 showed a lag in hemoglobin as her red blood cells increased. This course is not infrequently seen in pernicious anemia at a comparable stage in treatment. It is of interest that she was six weeks post partum and presumably her iron stores were low. It was our plan to give her iron with the expectation of obtaining a second response in reticulocytes, but she would not remain in the hospital sufficiently long to permit this. The finding of a moderate macrocytic anemia fifty-six days after completion of treatment leads us to predict that she has reached her peak of response and that a relapse is to be expected.

We are indebted to Dr. Paul F. Hahn of the Department of Biochemistry of Vanderbilt University Medical School for the measurements of radioactive iron absorption by these patients. The percentage of the ferrous iron absorbed in all 3 cases was much below that level found in iron deficiency anemia. This is of particular interest in case 2, in which during therapy a hypochromic anemia developed. The discussion of the interpretation of this failure to absorb iron in untreated sprue is outside the scope of the present communication.

Bone marrow obtained by sternal aspiration was examined before and after treatment in cases 2 and 3. Prior to treatment a typical megaloblastic arrest was seen. In case 2 this largely megaloblastic picture was replaced five days after institution of treatment by normoblastic predominance, which persisted on the eleventh day of therapy. It is to be recalled that at this time the macrocytic anemia was becoming hypochromic and microcytic. In case 3 the bone marrow had returned to normal ten days after treatment was begun.

The accompanying table compares the reticulocyte peaks observed in these 3 patients with sprue with those predicted in patients with pernicious anemia at the same level of red blood cells.[20] It is seen that 2 of the 3 patients obtained slightly lower reticulocyte responses than predicted for patients with pernicious anemia of the same grade of anemia, while the response of 1 patient greatly exceeded that predicted. Satisfactory increases in red blood cells occurred in all patients.

Although it is well to reserve a discussion of the probable relationship of this material to the antisprue factor present in liver extracts until the chemical nature of these factors are revealed, certain observations are pertinent. This material occurs in liver and in many liver extracts. It is effective when injected in the treatment of both sprue and pernicious anemia;[21] hence it has an activity corresponding to Castle's maturation factor. It seems logical to assign to this factor at least part of the antisprue activity of liver extracts. This may not be the only effective antisprue factor; however, it appears to be a satisfactory one for therapeutic use.

The present evidence suggests that the administration of this L. casei factor will result in a satisfactory response in cases of sprue, pernicious anemia, pernicious anemia of pregnancy and nutritional macrocytic anemia —all conditions which are associated with a marrow characterized by a megaloblastic arrest. Spies and his associates[22] have reported on the use of this material in a series of inadequately diagnosed macrocytic anemias and have implied thereby that it is efficacious in the treatment of all macrocytic anemia. Unpublished data of ours indicate that the factor is effective only in those macrocytic anemias with hyperplastic primitive marrow. So-called "dysplastic" and "aplastic" anemias have failed to respond to this material even though examination of the peripheral blood indicated a macrocytic anemia in some of these. Our experience with the refractory group of anemias has confirmed that of Watson and his associates.[23] One may predict, therefore, that this synthetic L. casei factor will be of value in treating those macrocytic anemias which are accompanied by hyperplastic marrow and which are known to respond satisfactorily to liver preparations.

Reticulocyte Peaks

	Maximum Reticulocyte Response Calculated for Pernicious Anemia	Maximum Reticulocyte Response Observed in Cases of Sprue
Case 1	23	15
Case 2	26	43
Case 3	15	11

The relationships which have been outlined have led us to suggest that vitamin M deficiency in the monkey is the experimental analogue of sprue in man.[24] Since there appear to be a number of related factors which have hemopoietic activity in animals and confusion has arisen in the nomenclature of these substances, it is tentatively suggested that those factors of this group

18. Manson-Bahr, P.: The Treatment of Sprue with Vitamin B_2 and Its Bearing on the Etiology of This Disease, Tr. Roy. Soc. Trop. Med. & Hyg. **34:** 347 (March) 1941. Sevringhaus, E. L., and Kyhos, E. D.: Reversal of Lingual Atrophic Changes with Nicotinamide Therapy, Arch. Int. Med. **76:** 31 (July) 1945.

19. Langston, Darby, Shukers and Day.[3] Day and others.[7] Day, Mims and Tottter.[6]

20. Isaacs, R., and Friedman, A.: Standards for Maximum Reticulocyte Percentage after Intramuscular Liver Therapy in Pernicious Anemia, Am. J. M. Sc. **196:** 718 (Nov.) 1938.

21. Moore, C. V.; Bierbaum, O. S.; Welch, A. D., and Wright, L. D.: The Activity of Synthetic Lactobacillus Casei Factor ("Folic Acid") as an Anti-Pernicious Anemia Substance, J. Lab. & Clin. Med. **30:** 1056 (Dec.) 1945.

22. Spies, T. D.; Vilter, C. F.; Koch, M. B., and Caldwell, M. H.: Observations of the Antianemic Properties of Synthetic Folic Acid, South. M. J. **38:** 707 (Nov.) 1945.

23. Watson, C. J.; Sebrell, W. H.; McKelvey, J. L., and Daft, F. S.: Possible Effectiveness of the L. Casei Factor ("Folic Acid") Concentrates on Refractory Anemia and Leukopenia with Particular Reference to Leukopenia Following Radiation Therapy, Am. J. M. Sc. **210:** 463 (Oct.) 1945.

24. Darby, W. J.; Jones, E., and Johnson, H. C.: The Use of Synthetic L. Casei Factor in the Treatment of Sprue, Science, **103:** 108 (Jan. 25) 1946. Jones, E., and Darby, W. J.: The Response of Sprue to Synthetic L. Casei Factor (Vitamin M), Proc. South. Section American Federation for Clinical Research, Atlanta Meeting, Dec. 8, 1945.

which possess similar hemopoietic activity for primates may conveniently be referred to as the vitamin M group. Such a usage would be consistent with the previous practice in naming the vitamins. Furthermore, it would be justified by the chronological order of the discovery of the biologic effect of this group of substances. The term "folic acid" has been so loosely employed that its further use in reference to this group of compounds can but lead to confusion.[25]

The aforedescribed responses demonstrate that all of the cardinal manifestations of sprue which are amenable to liver therapy undergo remission following the intramuscular injection of this synthetic L. casei factor. Study for longer periods of time will determine whether the fat content of the stools and the x-ray pattern of the gastrointestinal tract return to normal following such therapy. It is to be emphasized that these remissions have persisted for at least two months since the cessation of therapy. The response of 1 patient previously treated with liver extract has been more complete on the doses of L. casei factor used than was his previous response to liver extract. It is worthy of comment that patient 2 had previously received from her local physician a series of injections of thiamine, niacin, riboflavin, pyridoxine and pantothenic acid for a five weeks period with no beneficial effects.

The doses administered to these 3 patients are probably in excess of the minimal amount which would produce a maximal response. Moore and his co-workers [21] report a reticulocyte response in 2 cases of true addisonian pernicious anemia following the intravenous injection of 2 mg. per day of this factor. Jukes [26] states that the requirement of the chick for this L. casei factor is one-fifth to one-tenth that of its requirement for riboflavin. If a similar ratio holds in man, a maintenance dose would be of the order of 0.1 to 0.2 mg. per day, while curative doses may well be of the magnitude of a milligram daily. It should be pointed out that we have observed no local or systemic toxic effects from the administration of this material in the doses employed to some 12 persons who manifested a variety of blood dyscrasias.

Confirmation of our finding of the activity of this synthetic factor in cases of sprue has been reported from two other laboratories.[27]

SUMMARY

Intramuscular administration of synthetic L. casei factor in doses of 15 mg. per day has been followed by complete hematologic responses in sprue. The glossitis, diarrhea and absorption of water soluble factors have also responded to this substance as the sole therapeutic agent. The evidences of impaired fat absorption have not been altered in 2 cases by this therapy during a two month observation period. The serum carotene level in 1 case has risen. This substance or a precursor or metabolite of it would appear to be one of the active antisprue factors in liver extracts.

The resemblance of sprue to vitamin M deficiency in the monkey has led us to believe that the latter is the experimental analogue of sprue in man.

We propose that the group of substances related to L. casei factor and "folic acid" and which exhibit hemopoietic activity for primates be termed the "vitamin M group."

25. Hogan, A. G.: Letter to the Editor, Nutrition Rev. **2**: 223 (July) 1944.
26. Jukes, T. H.: Personal communication to the authors.
27. Moore, Bierbaum, Welch and Wright.[21] Spies, T. D.; Lopez, G. G.; Menendez, J. A.; Minnich, Virginia, and Koch, Mary B.: The Effect of Folic Acid on Sprue, South. M. J. **39**: 30 (Jan.) 1946.

Clinical Notes, Suggestions and New Instruments

THE EFFECT OF ATABRINE SUPPRESSIVE THERAPY ON EYESIGHT IN PILOTS

COLONEL E. A. ABBEY and MAJOR E. A. LAWRENCE
Medical Corps, Army of the United States

In order to determine the effect of continued doses of atabrine on visual acuity, 1,127 pilots from the Air Transport Command were tested. None of these pilots had ever worn glasses; they were tested during their active tour of duty, which involved flying from India or Assam bases to China across the Himalayan mountains—the so-called Hump. The problem of vision is of singular interest in this type of flying, which is probably the most hazardous of any in the world; treacherous mountains and an ever changing atmosphere which requires a great amount of instrument flying keep the pilot constantly alert and obviously require an absolutely faultless vision.

Effect of Suppressive Atabrine on Eyesight and Skin in 1,127 Cases

	Number of Cases	Percentage
Age		
20 to 25	588	52.1
26 to 30	393	34.9
31 to 35	128	11.4
36 to 40	18	1.6
Acuity		
No change	971	86.1
Better	114	10.1
Worse	42	3.8
Pigmentation of skin		
None	180	16.0
Mild	501	44.5
Moderate	429	37.9
Severe	18	1.6
Duration of atabrine ingestion		
1 month	81	7.2
2 months	55	4.9
3 months	67	6.0
4 months	523	46.4
5 months	259	23.0
6 months	110	9.6
7 months	17	1.5
8 months	9	0.8
9 months	3	0.3
10 months	3	0.3

Every pilot is required to pass the physical examination for flying status, the so-called 64 examination, at least once a year and oftener if prolonged hospitalization has occurred or following accident. Visual acuity was recorded from such an examination prior to the ingestion of suppressive atabrine. Visual acuity was then performed after varying months of atabrine ingestion. The results are given in the accompanying table.

If there was no alteration in the visual acuity prior to and during atabrine ingestion the result was recorded as "no change." If improvement or deterioration of acuity occurred it was recorded as "better" or "worse." In no instance was there a change for better or worse greater than 5/20. Of note too is the fact that in the entire group the acuity prior to suppressive atabrine was either 20/20 or 20/15 vision. It at once becomes obvious that a change in acuity of such small degree is without practical significance, for it is well known that small temporary variations may occur normally as a result of mental and physical fatigue, loss of sleep, nervousness and the general state of health and well being of the examined subject. Only one sitting was required to determine the acuity

From the India-China Air Transport Command.

in order to conform as closely as possible with previous examinations, and no rest previous to the test was given. Such conditions would further tend to minimize, to a point of negligence, changes of minor degree in acuity, since many of the pilots were tested after long flight and others after a night of varying indulgences. We are therefore correct in assuming that in no instance, save for the 1 case presented here, was there a change in acuity of any practical significance.

In this group of pilots ages ranged from 20 to 40 years, with 85 per cent approximately lying between 20 and 30 and the remaining 15 per cent over 30. Obviously, age has been of no significance in the changing of acuity in spite of the natural tendency for the eyesight to become hyperopic as the years advance.

Suppressive atabrine is administered in this theater in an initial dose of 0.1 Gm. a day for five days followed by 0.2 Gm. (two tablets) a day for ten days and then 0.1 Gm., or one tablet, every day. Approximately 70 per cent of the pilots tested had been taking the drug between sixteen and twenty weeks, certainly a long enough time to alter acuity materially if this was to prove an untoward effect. It was suggested, but certainly not proved, that acuity may change, the deeper the dermal staining from the ingestion of atabrine. From the table it may be seen that 82 per cent showed a definite yellow hue to the skin, varying from an arbitrary "mild" to "moderate." It was noted that there was no correlation between length of time of ingestion and intensity of dermal staining; some men, for example, having taken the drug for eight months, showed only a mild yellow discoloration and others, having taken the drug for one month, showed a moderate or severe staining. It would appear that the degree of dermal staining is purely the result of an individual susceptibility to the ingested drug. Certainly too there is no correlation between the degree of staining and visual acuity; as a matter of fact, all 18 cases that showed a severe reaction, in that the skin was deeply yellow stained, presented no change in acuity at all.

One case of apparently pure ocular sensitivity to atabrine has been brought to our attention and was instrumental in initiating this study. It occurred in a medical officer (A. E. S.) aged 35 who had been taking atabrine for twenty-one days prior to the onset of symptoms. These consisted of blurring of vision and a halo around lights during the dark hours. The visual acuity in both eyes was 20/30 prior to ingestion and 20/50 in both eyes three weeks after taking the drug. Ophthalmoscopically only a hazy cornea was noted; by slit lamp there were tiny patches of corneal edema. With discontinuance of atabrine suppressive therapy the acuity returned to 20/30 in both eyes in sixteen days, and all objective findings returned to normal. Following a rest period atabrine was again administered, with recurrence of all symptoms and objective findings as listed in some twenty-one days; return to normal vision occurred at this time in twenty-five days. There seems to be little doubt that in this case there was a definite sensitivity to the drug, manifested by patches of corneal edema and decrease in visual acuity.

CONCLUSIONS

1. The continued use of atabrine in doses of one tablet (0.1 Gm.) a day appears to have no effect on visual acuity, except in a highly sensitive and rare individual.

2. Older persons on suppressive atabrine therapy do not differ from the younger group as far as visual acuity is concerned.

3. There is no correlation between the depth of dermal discoloration and change in visual acuity.

4. The depth of dermal staining appears to be as a result of individual sensitivity and not related to the length of time atabrine has been taken.

Social and Natural Science.—Scientific discoveries do not fall from a clear sky. What actually happens is that the mind finds solutions to challenging problems only after long contact. How solutions finally dawn, not unexpectedly, is occasionally narrated after most careful autobiographical exploration as the long list of simultaneous discoveries demonstrates.—Cohn, Alfred E.: Minerva's Progress, New York, Harcourt, Brace & Co., 1946.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The following statement has been authorized for publication by the Council.

AUSTIN SMITH, M.D., *Secretary.*

CHLOROQUINE, NONPROPRIETARY NAME FOR SN 7618

The Board for Coordination of Malarial Studies has requested the Council on Pharmacy and Chemistry to give consideration to the recommendation of a nonproprietary name for a new antimalarial compound known so far as SN 7618. It has the chemical structure of 7 chloro-4 (4-diethylamino-1-methylbutylamino) quinoline. Chloroquine has been proposed as the nonproprietary name.

The Council has been informed that the compound is covered by a German patent which has been assigned to the Winthrop Chemical Company, although all of the work in developing its antimalarial properties and usage has been done by the government contractors working under the Office of Scientific Research and Development. The Council has been cognizant of the value of the cooperative studies which have been undertaken during the war. It feels that every effort should be made to encourage this and similar work and to make available as soon as seems expedient the results of the studies so that they may be applied for the good of humanity. The adoption and use of appropriate nonproprietary names for truly useful drugs would seem to be a step in this direction.

The Council has voted to recognize Chloroquine as a nonproprietary name for the antimalarial substance sometimes described as SN 7618.

Council on Foods and Nutrition

ACCEPTED FOODS

The following additional foods have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association for admission to Accepted Foods.

JAMES R. WILSON, M.D., *Secretary.*

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, 1939, p. 156)

Beech-Nut Packing Company, Canajoharie, N. Y.

BEECH-NUT JUNIOR RAISIN RICE PUDDING contains milk (raw-whole), dextrose, white rice, raisins, whole eggs, farina (enriched), salt and water.

Analysis (submitted by manufacturer).—Total solids 30.08%, moisture 69.92%, ash 0.87%, fat (ether extract) 1.45%, protein (N × 6.25) 2.42%, crude fiber 0.07%, carbohydrates (other than crude fiber) 25.27%, calcium 0.063%, phosphorus 0.068%, iron total 0.41 mg. per hundred grams, iron "available" (bipyridyl method) 0.40 mg. per hundred grams, copper 0.07 mg. per hundred grams.

Calories.—124 per hundred grams, 35 per ounce.

Vitamins.—	Per Hundred Grams
Vitamin A, total	114 U. S. P. units
Thiamine	0.023 mg.
Ascorbic acid	2.02 mg.
Riboflavin	0.106 mg.
Niacin	0.80 mg.

The Gerber Products Company, Fremont, Mich.

GERBER'S CHOPPED CARROTS.

Analysis (submitted by manufacturer).—Total solids 7.3%, protein 0.6%, fat (ether extract) 0.1%, crude fiber 0.6%, carbohydrates (by difference) 4.9%, ash 1.0%, calcium 0.025%, phosphorus 0.021%, iron 0.0009%.

Calories.—6 per ounce.

Vitamins.—		
Vitamin A equivalent	12,500 I. U.	per hundred grams
Thiamine	0.025 mg.	per hundred grams
Riboflavin	0.037 mg.	per hundred grams
Ascorbic acid	2.8 mg.	per hundred grams

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SATURDAY, MARCH 23, 1946

RESEARCH IN AVIATION MEDICINE FOR THE GERMAN AIR FORCE

A report[1] recently released by the United States War and Navy departments on German research in aviation medicine concerns, among other subjects, pilot ejection, emergency procedures for escape from pressurized cabins at high altitudes, the effect of high wind velocities on the human head, thorax and abdomen, the liaison approach between aircrew and machine being operated to improve efficiency of operation and research and the development of the personnel parachute. The Germans have developed a parachute emergency oxygen apparatus which consists of a series of high pressure cylinders arranged in a circular manner to form a flat plate about an inch thick. The cylinders are connected to an outlet valve through a narrow tube, which is about 1 meter long and which acts as a metering orifice. The entire assembly is flat and fits into a pocket in both seat and backtype parachutes. During normal flight this emergency system is connected to the main aircraft oxygen system. A ripcord attaches the parachute assembly to the aircraft seat and, when the pilot wishes to leave the airplane, that portion of the emergency system which is attached to the main oxygen system is detached and the emergency oxygen flow valve is opened.

In their experiments on acceleration they measured the systolic and diastolic pressures every fifteen seconds and found that acceleration of 3 g (acceleration of gravity) can be sustained for long periods without difficulty. Above 3 g visual and mental disturbances began. The pulse rate increases rapidly in all trials. G tolerance increases during digestive processes and with addition of carbon dioxide to inhaled mixtures. Use of abdominal bands did not increase g tolerance. To sustain g higher than 3 it is necessary to place the men in horizontal positions.

It is pointed out that visual acuity is only one function of the eye. Other eye functions associated with functions of the brain consist of (*a*) the finding of objects, (*b*) the recognition of objects and (*c*) orientation. In contrast to the visual acuity, these functions can be well trained. Therefore investigations of the higher associated functions are of the greatest practical value to aviation, as shown by the "Rhenshaw System" in the AAF. A test manometer was developed by slight modification of a standard sphygmomanometer for the purpose of measuring the permeability of the capillaries. It was found that pressure of 100 to 200 mm. of mercury was necessary to suck blood out through the skin in normal subjects and considerably less in pathologic subjects. Altitude adaptation could be developed by a stay of at least eleven days in the mountains at an altitude of at least 7,000 feet combined with a great deal of sport, good food and sleep. The limit of the adaptated man's altitude tolerance will be between 26,000 and 31,000 feet on the average without oxygen, although some men get to 33,000 feet. With oxygen the limit is 3,300 feet higher than normal, and man can fly without pressure cabins up to 45,000 feet. The time reserve of an adaptated man at 39,000 feet is one to one and a half minutes. Investigations on the effectiveness of drugs and physical stimulants to improve man's ability to work revealed that caffeine results in great irritability of the nervous system combined with loss of confidence; a mixture of caffeine and metrazol gives much better results; diphenylhydantoin has a depressing effect; morphine induces a desire to rest and to sleep; amphetamine is a good stimulant but results in a hangover. Appreciable improvement in ability and willingness to work was apparent after several Finnish baths (the Sauna) and exposure to sunlight.

An interesting development in eye prostheses is one with a photocell, an amplifier and a sound producer. In this arrangement light is converted into sound. By help of a lens system it is possible to adjust different angles of view. This construction enables blind men to find their way and to obtain sufficient orientation. There is also the development of a visual prosthesis changing the light into a tone in the same manner but combined with an ikonoscope. Thereby one has an ear image instead of an eye image. After a brief training period blind men could read any letter of the alphabet in two seconds. Investigations of other methods showed that this method seems to be the best one to read normal letters and to recognize landscapes.

Contrary to the general idea that rapid rewarming of men after a prolonged immersion in water accelerates collapse, they found that animals recovered much more readily after rapid rewarming than after slow rewarming. In experiments on parabiotic rats the controlled parabiotic circulation was clamped off during cooling, and this clamp was removed with rewarming. With slow rewarming the cold parabiotic did not recover; with rapid warming the cold parabiotic recovered and the control parabiotic showed no ill effects. Rapid warming of animals that were cooled to

1. Research in Aviation Medicine for the German Air Force (Report 251), Office of the Publication Board, Department of Commerce, Washington, D. C.

almost lethal temperatures resulted in greater recovery than slow warming.

The information contained in the report was obtained by our investigators who visited the experimental laboratories in Germany and interviewed the research workers. The information is interesting chiefly because it offers a basis for comparison between our own state of knowledge with regard to problems associated with aviation and that of the enemy. On the whole, the German aviation science does not reveal any successful solving of problems that our own investigators have not tackled and solved.

FREUND'S EMULSIFIED VACCINES

In 1942 it was shown by Freund [1] and afterward confirmed by Friedewald that the immune response of animals may be prolonged and often elevated by injecting antigens in the aqueous phase of saline in liquid petrolatum emulsions.[1] Applying the emulsion technic Mudd and his associates of the University of Pennsylvania subsequently attempted to improve the immunologic response to dysentery vaccines.[2] Falba, a stabilizing agent derived from lanolin, was mixed by an electric stirrer with a saline suspension of alcohol killed Shigella paradysenteriae bacilli until a smooth paste was obtained. Liquid petrolatum was then added and stirred until the emulsion was well diffused. The proportion of the constituents, antigen in saline: falba: liquid petrolatum was 1:1:4 respectively.

Thirty-five inbred white Swiss mice were given a single subcutaneous injection of 20 micrograms of S. paradysenteriae cells in 0.15 cc. of saline solution. A similar group was injected with 20 micrograms of the same vaccine in 0.15 cc. of liquid petrolatum. At appropriate intervals mice from each group were exsanguinated and their pooled serum titrated for specific agglutinins. With the saline vaccine the agglutinin titer reached a maximum of 40 units by the end of one week. The titer then declined to 4 units by the end of six weeks, at which level it remained practically constant till the end of the experiment (twenty-two weeks). With the emulsified vaccine the titer rose to 256 units by the end of ten weeks and remained at this high level till the fourteenth week. After the fourteenth week the titer gradually fell to 32 units by the twenty-second week. The peak titer with the emulsified vaccine was thus six times the peak titer with the saline vaccine. By using larger doses with other groups of mice the peak titer was increased to as much as 1,280 units, or thirty times that of the saline control.

In a second series of tests with the same technic, groups of rabbits were injected subcutaneously with two doses of 25 micrograms each of the same vaccines. The doses were given three days apart. Sample bleedings were taken from the ear veins at appropriate intervals and the pooled serum was titrated by the mouse protective test. With the saline vaccine there was a twenty-fivefold increase in mouse protective titer by the end of two weeks. The titer then fell to a fivefold increase by the end of four weeks and to a twofold increase by the end of thirty weeks. With the emulsified vaccine the titer rose to a fiftyfold increase by the end of six weeks and remained at this high level for about six weeks. The titer then slowly decreased till the end of the experiment (thirty weeks). The Freund emulsion technic, therefore, increased the antibody response twofold and prolonged the period of effective immunity at least sevenfold.

Successful clinical trials of Freund's emulsion technic have been reported by Henle [3] of the department of pediatrics, University of Pennsylvania. Centrifugally concentrated influenza virus vaccines of type A and B were selected as the stock vaccines. Half of each vaccine was emulsified in 1 part of falba and 4 parts of liquid petrolatum. The other half of the same vaccine was diluted 1:4 in buffered saline solution to serve as a control. Eighty female subjects received subcutaneously 0.3 cc. of the emulsified vaccine either in a single dose or as a divided dose in two simultaneous injections. A similar group of 80 female subjects was injected in the same way with 0.3 cc. of the saline vaccine. Individuals of both groups were bled before vaccination and at the end of two weeks and of one, two, three and six months. The serums were tested individually by the Hirst technic [4] for their ability to inhibit chick red cell agglutination by influenza virus A and B.

With the saline vaccine the geometric mean of the individual antibody titers reached a maximum of about 250 units by the end of two weeks and then gradually decreased to about 150 units by the end of six months. At the end of six months less than 60 per cent of the individuals given this control vaccine had titers of more than 128 units. Clinical experience has shown that 128 units is the minimum effective prophylactic titer.[5] With the emulsified vaccines a maximum titer of about 700 units was reached by the end of two months, with but slight decrease in this titer by the end of six months. At the end of six months 95 per cent of all individuals given the emulsified vaccine had titers well above the minimum protective level (128 units).

In these clinical tests, nodules of varying dimensions could be palpated in the subcutaneous tissues of most individuals. These gradually decreased in size. In most cases they disappeared spontaneously by the end of the observation period. In only two of the one

1. Freund, Jules, and McDermott, Katherine: Proc. Soc. Exper. Biol. & Med. **49**: 548 (April) 1942. Freund, Jules, and Bonanto, Mary V.: J. Immunol. **48**: 325 (May) 1944. Friedewald, W. F.: J. Exper. Med. **80**: 477 (Dec.) 1944.
2. Halbert, S. P.; Mudd, Stuart, and Smolens, Joseph: Proc. Soc. Exper. Biol. & Med. **60**: 17 (Oct.) 1945.
3. Henle, Werner, and Henle, Gertrude: Proc. Soc. Exper. Biol. & Med. **59**: 179 (Nov.) 1945.
4. Hirst, G. K.: J. Exper. Med. **75**: 49 (Jan.) 1942.
5. Henle, Werner; Henle, Gertrude, and Stokes, Joseph Jr.: J. Immunol. **46**: 163 (March) 1943.

251), Office of the Publication Board, Department of Commerce, Washington, D. C.

effects. Rapid warming of animals that were cooled to

hundred and twenty injections with the emulsified vaccines were abscesses noted about two months after the injection. Only one of these had to be drained surgically. Henle regards this number as not too discouraging in the light of earlier experiments with alum precipitated toxoids.

Application of Freund's emulsified antigens to allergic desensitization and to the production of commercial antiserums have not yet been reported. No fully satisfactory theory has thus far been proposed to account for the evident superiority of the emulsified vaccines.

Current Comment

PSYCHIATRIC EXAMINATION OF RUDOLF HESS

The role of the psychiatrist in the trial of the leading Axis war criminals has attained historical significance. This significance derives in a large measure from the fact that the psychiatric panel was appointed by the International Military Tribunal and reported its findings direct to that body. The panel consisted of three representative Russian psychiatrists, three British, one French and three American. The American psychiatrists, Dr. Nolan D. C. Lewis, professor of psychiatry, Columbia University College of Physicians and Surgeons, Dr. D. Ewen Cameron, professor of psychiatry, McGill University Faculty of Medicine, and Paul L. Schroeder,[1] Colonel, M. C., professor of psychiatry, University of Illinois College of Medicine, reported:

> We find, as a result of our examinations and investigations, that Rudolf Hess is suffering from hysteria, characterized in part by loss of memory. The nature of this loss of memory is such that it will not interfere with his comprehension of the proceedings, but it will interfere with his response to questions related to his past and will interfere with his undertaking his defense. In addition, there is a conscious exaggeration of his loss of memory and a tendency to exploit it to protect himself against examination. We consider that the existing hysterical behavior which the defendant reveals is also initiated as a defense against the circumstances in which he found himself while in England, that it has now become habitual and that it will continue as long as he remains under the threat of imminent punishment, even though it may interfere with his undertaking a more normal form of defense. It is the unanimous conclusion of the undersigned that Rudolf Hess is not insane at the present time in the strict sense of the word.

The psychiatrists were permitted to study these defendants as impartial workers utilizing the scientific method. The procedure removed the restriction imposed on the expert witness in civilian courts in both criminal and civil trials in that they served neither the prosecution nor the defense. Because such a procedure is well-nigh unique in criminal jurisprudence, it has historical interest. The appointment of psychiatrists from four geographically widely separated countries, speaking three different languages and coming from other cultures, assured a diversity of point of view and breadth of approach. The tribunal did not limit the psychiatrists to direct categorical replies; it authorized a report made in the form which commended itself to the examiners. This is likewise unique in court practice. The hearing of the tribunal on Nov. 30, 1945 concerning the mental state of the defendant was noteworthy on several counts. First among these is the remarkable degree of accord revealed in the reports of the groups of psychiatric experts representing the four countries responsible for the trial. This essential agreement between the groups, whose examinations, with the exception of that of the French, who participated in all three, were carried out separately, strengthens the conclusions of the psychiatric panel. The investigation of the defendant's behavior brought out his great instability as an important factor. Within the period of four years his record included a great variety of symptoms, delusions of persecution, two suicidal attempts, two periods of hysterical amnesia, various bodily symptoms such as abdominal cramps, which apparently are of neurotic origin, and finally his last dramatic outburst. These abnormalities of behavior have appeared and vanished as the pressures to which he has been subjected since he broke away from his established position in the Nazi hierarchy have waxed and waned.

1. Office of U. S. Chief of Counsel, APO 403, U. S. Army, Dec. 14, 1945.

CHOLERA STUDIES IN CALCUTTA

In a control experiment on the treatment of cholera in a highly endemic or epidemic area of India,[1] patients were taken in rotation as they were admitted to the hospital and assigned to the following groups according to the treatment given: A, sulfaguanidine; B, control; C, sulfadiazine; D, penicillin, and E, sulfadiazine and penicillin combined. All patients received supportive treatment in the form of intravenous, hypertonic and isotonic solution of sodium chloride and oral stimulants as indicated to offset dehydration, emaciation and circulatory failure. Group A received 3 Gm. of sulfaguanidine every four hours for three days and twice daily for the next three days, until a total of approximately 72 Gm. had been given. Group C received sulfadiazine 1 Gm. every four hours for the first day and 2 Gm. every four hours for the following two days, making a total of 30 Gm. Group D received an initial dose of 100,000 units of penicillin administered intramuscularly and 25,000 units every four hours thereafter for a total of 200,000 units. Group E received the combined treatments of groups C and D. It became apparent during the investigation that the usefulness of the therapeutic agents to the acutely ill patients could not be fully established because of the rapid progression into a state of shock, collapse or death before the drug could be effective in combating the infection. The salines administered were sufficient to offset dehydration, but the patients would lapse into shock and die of circulatory collapse. Results with plasma administration to combat shock and prevent collapse were much more encouraging. The circulatory response was definite, the heart sounds became strong and cyanosis disappeared quickly. The introduction of the plasma factor into a given group apparently lowered the death rate of that group.

1. Summary of a study taken from Epidemiology Unit No. 50.

2. Halbert, S. P.; Mudd, Stuart, and Smolens, Joseph: Proc. Soc. Exper. Biol. & Med. **60**: 17 (Oct.) 1945.

5. Henle, Werner; Henle, Gertrude, and Stokes, Joseph Jr.: J. Immunol. **46**: 163 (March) 1943.

so as to give undue credit to the value of the drug used. It was believed, therefore, that a much more accurate picture could be obtained by reclassifying all treated cases and placing them in three groups: (1) patients treated with plasma in addition to chemotherapy, (2) patients receiving chemotherapy alone and (3) a control group consisting of all patients who had not received treatment or who had insufficient treatment or only supportive treatment. In the first group the death rate was zero, in the second group the death rate amounted to 1.1 per cent, while in the third group the death rate was 38.3 per cent. The value of chemotherapy was clearly demonstrated. The dramatic effect of plasma is still more evident if the shock or collapse cases are segregated and tabulated. There were, in all, 78 severely ill patients in that group. The results in the group showed a mortality rate of 95.8 per cent for the control group, 15.8 per cent for chemotherapy alone and no mortality in the group treated with plasma plus chemotherapy. It appears, therefore, that chemotherapy with supportive treatment will effectively lower the expected death rate in cholera.

PIONEER HEALTH TELECASTS

THE JOURNAL this week (page 802) announces experimental telecasts over television station W9XBK carried out by the Bureau of Health Education in cooperation with the station management. Television offers a medium which has some of the characteristics of radio and some of those of the stage, appealing primarily to the eye rather than to the ear as does radio. Television should be a particularly useful medium for the demonstration type of educational program. Television makes possible demonstration and exhibit, appealing both to the visual and to the auditory pathways to the brain. Procedures difficult to describe by word of mouth alone can be visually demonstrated by bringing before the camera such procedures as the taking of blood pressure, bandaging, first aid, blood counting and the use of the x-rays. The procedure in a television program may be briefly outlined by describing what is probably the first medical telecast, made by the Director of the Bureau of Health Education as a guest on the program entitled "Tea Time," by Harriet Hester. The program was opened by the two participants sitting at tea in a living room and beginning a conversation about nutritionally adequate lunches. They then adjourned to a kitchen setup, where with actual foods and models they set up on a table three nutritionally adequate lunches consisting of different kinds of sandwiches, fruit, milk, skim milk or cocoa and ice cream for dessert. The arrangement of these lunches in attractive patterns on a table was accompanied by an informal conversation in which the nutritional values of each item were illustrated. In similar manner, by demonstration and explanation with the use of enlarged charts, curves, models, pictures and actual objects, other topics can be demonstrated visually while they are being explained. For the present the television audience is limited. In metropolitan areas there are a few hundred television receiving sets. Telecasting is on an experimental basis. Methods and technics can be developed so that the medical profession will be ready in the future to make use of this new medium as it has used older mediums, such as the radio and the printed page, effectively.

DETECTING RADIATION HAZARDS

A recent release from the University of Rochester reveals many heretofore unpublicized aspects of research connected with the atomic bomb. The medical aspects of the research were organized in ten divisions. Among the most important was the development of methods to protect the employees; of the thousands employed in the plants not a single one was injured by any of the new and peculiar hazards of the work. Animal investigations on the toxicology and pharmacology of uranium compounds established criteria for tolerance levels. Methods of analyzing the urine of employees were devised to determine the extent of exposure and to estimate the amount of radiation exposure which could be tolerated by human beings. A method of taking finger impressions in wax was devised and employed on the workers handling radioactive materials in atomic plants. This permitted the determination of when, if at all, employees began to show changes in the skin as a result of contact with the materials handled. One division studied the blood of large groups of animals, completing over 100,000 analyses. Geneticists studied the effects produced on the offspring of mice and fruit flies which had been exposed to radiation. Some 277,000 mice and 50 million fruit flies were bred and observed. The application of the vast amount of data gathered by the University of Rochester group, of which that cited is only an example, can hardly be predicted, but the results will certainly be significant in the fields of metabolism, cancer, hematology and physical medicine.

DEATH STATISTICS AS INDEX OF EFFICIENCY OF CANCER SERVICE

In the United States cancer of the breast in 1943 caused 16,140 deaths, of the uterus 16,968, of the larynx 1,490, of the tongue 1,231, of the lip 661.[1] In Chicago in 1944 cancer of the breast caused 505 deaths, of the uterus 583, of the larynx 75, of the tongue 48, of the lip 11.[2] In 1942 cancer of the breast in England [3] caused 7,877 deaths, of the uterus 5,094, of the larynx 1,206, of the tongue 1,033, of the lip 290. These forms of cancer are curable in their early stages; the figures cited therefore indicate grave shortcomings in clinical cancer service. Many agencies are now urging on the public and the medical profession the vital importance of early diagnosis with prompt adequate treatment of cancer. Increasing stress is being placed on the need of more modern facilities for cancer service. States, cities and other communities as well as closed groups like the Veterans Administration in their death statistics of cancer have an invaluable index of the efficiency of cancer service.

1. Deaths from Cancer of Specific Sites in the United States—1943, Report of U. S. Bureau of the Census.
2. Communication from Board of Health, Chicago.
3. Discussion on Postwar Organization for the Treatment of Cancer, Proc. Roy. Soc. Med. **38**: 147 (July) 1945.

MEDICINE AND THE WAR

ARMY

ARMY AWARDS AND COMMENDATIONS

Captain Bernard J. Ryan

Capt. Bernard J. Ryan, Chateaugay, N. Y., while serving with the 506th Parachute Infantry of the 101st Airborne Division, was awarded the Silver Star and the Silver Star with Oak Leaf Cluster. He was also awarded the Bronze Star "for meritorious service in connection with military operations against an enemy of the United States in France, Holland and Belgium. He received the Purple Heart for wounds received in action at Bastogne, Belgium, in January 1945. According to the citation accompanying the Silver Star award, "Capt. Bernard J. Ryan, while serving with the Army of the United States, distinguished himself by gallantry in action. On Oct. 5, 1944, after two hours of constant mortar and artillery fire, his battalion was subjected to an attack by a strong enemy force in the vicinity of Opheusden, Holland. The battalion aid station located in the town was under heavy enemy fire from mortars, artillery and small arms. Captain Ryan, assistant battalion surgeon, continued operating the aid station despite the enemy fire and on several occasions made his way to the front lines to treat and evacuate wounded personnel in the midst of enemy machine gun and shell fire. He refused to move the aid station to the rear although it had received two direct hits, for such a move would detract from the efficient evacuation of casualties. Captain Ryan, disregarding enemy fire and the possibility of being captured, treated a large number of American and British casualties, saving many lives. When the battalion was relieved and he was ordered to set up his aid station in the rear, Captain Ryan remained at his front line post until every casualty had been evacuated. Throughout the action he displayed outstanding devotion to duty, skilful application of his superior knowledge and complete disregard for his personal safety. His actions were in accordance with the highest standards of the military service."

The award of the Oak Leaf Cluster to the Silver Star was accompanied by a citation giving a further example of Captain Ryan's gallantry: "On Jan. 13, 1945 in the vicinity of Foy, Belgium, the advance elements of an attacking company were subjected to heavy enemy artillery and small arms fire and sustained heavy casualties. After Captain Ryan had established his aid station in a house near the forward elements it became the target for enemy machine gun and small arms fire, which killed one man and wounded three. Disregarding the enemy fire, Captain Ryan was wounded. In spite of his wound, he continued to care for his patients and to direct the functions of the aid station. The outstanding devotion to duty and courage of Captain Ryan proved instrumental in saving the lives of many American soldiers. His actions were in accordance with the highest standards of the military service." Dr. Ryan graduated from Harvard Medical School, Boston, in 1940 and entered the service Feb. 11, 1943.

Captain David F. Kohn

Capt. David F. Kohn, Mount Pocono, Pa., was recently commended by Brig. Gen. R. F. Kernan, commanding officer of the 27th Division Artillery. Stated General Kernan in the citation accompanying the commendation, "It has been brought to my attention that during the battles for Saipan and Tinian Islands, Marianas Group, from June 17 to July 31, 1944, you performed your duties as battalion surgeon in a skilful and highly commendable manner. Your devotion to duty and untiring labor no doubt kept many men in action who might otherwise have been causalties. Your performance as a soldier and a medical officer bring credit both to your profession and to the military service." Dr. Kohn graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1931 and entered the service Feb. 1, 1941.

Lieutenant Colonel Bert Bradford Jr.

Lieut. Col. Bert Bradford Jr., Charleston, W. Va., was recently awarded the Legion of Merit "for exceptionally meritorious conduct in the performance of outstanding service, as chief of surgical service, 45th Evacuation Hospital, from Aug. 2, 1944 to May 10, 1945. Lieutenant Colonel Bradford skilfully supervised the work of his section and teams attached to his unit in a manner which insured the highest quality of surgical treatment to wounded men. Particularly noteworthy was his introduction in the hospital of the most recent developments in the treatment of wounds of the hand and vascular injuries. By his demonstration of professional ability, sound judgment and untiring effort Lieutenant Colonel Bradford contributed greatly to the success of his unit's operation, and his services reflect highest credit on himself and the armed forces of the United States." Dr. Bradford graduated from Washington University School of Medicine, St. Louis, in 1935 and entered the service Sept. 25, 1940.

Colonel Johnson McGuire

For his record as medical consultant for the Fifth Service Command, Col. Johnson McGuire, Cincinnati, was recently awarded the Legion of Merit. The citation accompanying the award stated that "by reason of his unfailing tact, judgment and superior professional qualifications Colonel McGuire was, in a great measure, responsible for the outstanding quality of medical treatment by hospitals of the Fifth Service Command." Dr. McGuire graduated from Johns Hopkins University School of Medicine, Baltimore, in 1924 and entered the service June 19, 1943.

Captain Monroe Cohen

Capt. Monroe Cohen, Brooklyn, was recently awarded the Bronze Star for distinguished service as battalion surgeon "in connection with military operations against the enemy of the United States from July 4, 1944 to May 1, 1945 in France, Luxemburg, Belgium and Germany." Dr. Cohen graduated from Long Island College of Medicine, Brooklyn, in 1942 and entered the service July 3, 1945.

Captain Stanford Borne

Capt. Stanford Borne, Brooklyn, was recently awarded the Bronze Star "for meritorious service in connection with military operations against the enemy from March 8, 1945 to April 15, 1945 in Germany. As clearing platoon leader Captain Borne distinguished himself by his untiring efforts, expert medical treatment and evacuation of the wounded, under adverse conditions." Dr. Borne graduated from Long Island College of Medicine, Brooklyn, in 1941 and entered the service July 1, 1942.

Colonel Harry Penn Harper

Col. Harry P. Harper, Rochester, Minn., was recently awarded the Legion of Merit for establishing the first field hospital across the Rhine. Dr. Harper graduated from the University of Minnesota Medical School, Minneapolis, in 1937 and entered the service July 31, 1941.

Captain Nicholas J. Chiara

The Bronze Star and Purple Heart awards were recently presented to Capt. Nicholas J. Chiara, Brooklyn, for conspicuous service on Mindanao in June 1945. Dr. Chiara graduated from the Long Island College of Medicine, Brooklyn, in 1941 and entered the service July 1, 1942.

Major Manuel A. Bergnes

Major Manuel A. Bergnes, Teaneck, N. J., was recently awarded the Silver Star for action on Mindanao. Dr. Bergnes graduated from Long Island College of Medicine, Brooklyn, in 1941 and entered the service July 1, 1942.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Pilkington, John S., Capt., Uniontown.
Word, Samuel B., Col., 812 10th St., SW, Birmingham.
Zieman, John A., Capt., Route 1, Box 428, Mobile.

Colorado

Fowler, Harmon L., Lt. Col., 1279 Ogden St., Denver.
Freeman, Leonard, Major, 300 S. Gaylord St., Denver.
Hall, Henry L., Major, 1670 Williams, Denver.
Kimball, Merritt H., Lt. Col., 100 Metropolitan Bldg., Denver.
Luther, Ross D., Capt., 202 E. Bennett Ave., Cripple Creek.
McKeen, Harold R. Jr., Capt., 966 S. Josephine St., Denver.
Ozamoto, Isamu, Capt., 830 18th St., Denver.
Perkins, James M., Capt., 356 Marion St., Denver.
Plank, Joseph R., Major, 200 S. Eudora St., Denver.
Ramo, Leon, Lt. Col., J.C.R.S. Sanatorium, Spivak.
Rosenbloom, Meyer R., Capt., 768 Colorado Blvd., Denver.
Van Der Schouw, H. M., Capt., Lutheran San., Wheat Ridge.
Wade, Theodore E., Major, 720 W. Pitkin St., Pueblo.

Connecticut

Panettieri, Andrew J., Capt., 3084 Main St., Bridgeport.
Pepe, Anthony J., Capt., Norwich State Hospital, Norwich.
Pinn, Abraham S., Major, 75 Sherman Avenue, New Haven.
Sirica, Alphonse E., Capt., 22 McDonald Ave., Waterbury.
Smith, Frederick F., Capt., 84 Dixwell Ave., New Haven.
Thompson, Lloyd J., Col., 128 Beach Avenue, Woodmont.
Zujko, Alphonse J., Capt., 190 Broad St., New Britain.

District of Columbia

Chase, William W., Lt. Col., 1813 Parkside Drive, Washington.
Custis, Horace H., Capt., 1839 Irving St. N.W., Washington.
Kassan, Robert J., Major, 4503 4th St. N.W., Washington.
Kistin, Albert D., Capt., 2205 42d St. N.W., Washington.
Lafsky, Benjamin P., Lt. Col., 5421 7th St. N.W., Washington.
Lomack, C. L., 1st Lt., 2911 Sherman Ave. N.W., Washington.
MacBrayer, Reuben A., Lt. Col., 3733 T St. N.W., Washington.
Thompson, J. L. Jr., Lt. Col., 1735 20th N.W., Washington.

Florida

Borland, James L., Major, 1786 Challen Ave., Jacksonville.
Boughton, Herman, Major, 6601 Brevity Lane, Miami Beach.
Clark, Samuel J., Capt., 128 Patten Heights, Lakeland.
Edwards, George W. II, 1st Lt., 309 Cherokee Drive, Orlando.
Irwin, Thomas M., Major, 322 E. Central Ave., Orlando.
Jenkins, Leslie M., Capt., 3232 Emathla St., Miami.
Lytle, Carl S., Lt. Col., 29 Holder Block, Ocala.
Mitchell, William S., Major, 712 Daniel St., Orlando.
Reeser, Richard Jr., Lt. Col., 218 University Blvd., Daytona Beach.
Smoak, Philip L., Capt., 1907 Oakmont Ave., Tampa.
Snelling, William R., Major, Fernandina.
Soskis, Elbert J., Capt., Mulberry.
Torrado, Rene A., Capt., 541 Lincoln Road, Miami Beach.
Watson, Francis M., Lt. Col., 207 N. 5th St., Chipley.

Georgia

Etheridge, William N., Capt., 33 Maddox Drive N.E., Atlanta.
Fleming, Carlton A., Major, 1008 Hall Avenue, Tifton.
Hatcher, Milford B., Major, The Massee, 401 College, Macon.
Huie, Lynn M., Capt., Monroe.
McWhorter, Myrtus R., Capt., 1528 32d St., Columbus.
Nunnally, Harry B., Capt., Broad St., Monroe.
Paulk, James R., Capt., Moultrie.
Roberts, Luther J. Jr., Capt., Manchester Hotel, Manchester.
Porter, John E., Major, 501 E. 53rd St., Savannah.
Ragland, Frederick B., Capt., 205 King St., Dalton.
Rosen, Emanuel F., Capt., 609 W. 37th St., Savannah.
White, Cecil G. Jr., Capt., 2772 Alpine Road, Atlanta.

Indiana

Bartle, James L., Capt., 137 S. Franklin, Knightstown.
Baxter, James W. Jr., Capt., 1201 E. Spring St., New Albany.
Bennett, Jene R., Capt., 310 Pennsylvania Ave., Plymouth.
Blemker, Russell M., Major, 215 N. Franklin St., Greensburg.
Brown, Kenneth H., Major, 1654 Hedden Park, New Albany.
Browning, William M., Major, Indianapolis City Hospital, Indianapolis.
Crain, James W., Capt., Brooklyn.
Dittmer, Jack E., Major, 54 Lincolnway, Valparaiso.
Eicher, Palmer O., Capt., Belmont Road, Decatur.

Indiana—Continued

Ferrell, Mars B., Capt., 2035 N. Meridian St., Indianapolis.
Fullerton, Robert L., Capt., 1307 E. Michigan St., Indianapolis.
Gilliatt, James P., Major, 204 S. High St., Salem.
Graf, Jerome A., Capt., Bloomfield.
Kissinger, Knight L., Capt., 207 S. Wayne, Angola.
Lenk, George G., Capt., 2007 Maumee Ave., Fort Wayne.
McCarty, Virgil, Major, 403 W. Spruce, Princeton.
Price, Douglas W., Major, 402 N. Madison St., Nappanee.
Price, Sidney, Capt., 1137 W. 6th St., Marion.
Pyle, Harold D., Major, 115 N. Sunnyside Ave., South Bend.
Raphael, Isidor, Major, 305 Cadick Apts., Evansville.
Rothberg, Maurice, Major, 114 Wayne Pharmacal Bldg., Ft. Wayne.

Iowa

Brobyn, Thomas E., Major, 1309 Broad St., Grinnell.
Burch, Earl S., Capt., Dayton.
Coughlan, Charles H., Major, 706 Warden Apts., Ft. Dodge.
Foss, Robert H., Capt., Remsen.
Friedman, Herbert P., Capt., 711 E. Burlington, Iowa City.
Johnston, Charles H., Major, 24 W. 34th St., Des Moines.
Kast, Donald H., Capt., 4904 Pleasant St., Des Moines.
Kuntz, George S., Capt., 714 25th St., Sioux City.
Lowry, Frederick C., Capt., 1206 Yewall St., Iowa City.
Magaret, Ernest C., Capt., 416 N. Walnut St., Glenwood.
Nicholson, Clyde G., Capt., 301 S. Hill Avenue, Spirit Lake.
Putz, Arthur E., Major, Edgewood.
Robertson, Treadwell A. Jr., Capt., 211 W. 5th St., W. Liberty.
Robinson, Van Cooper, Major, 918 Des Moines St., Des Moines.
Rodawig, Donald F., Major, Spirit Lake.
Ryan, Martin J., Major, 3712 Jones, Sioux City.
Schulz, Arthur W., Lt. Col., Vet. Admin., Des Moines.

Kansas

Finney, Guy A., Lt. Col., 300 Woodlawn Avenue, Topeka.
Gradinger, Billens C., Major, 219 Poplar St., Halsted.
Hatcher, Albert C., Capt., 508 N. Washington, Wellington.
Hatton, Lloyd W., Capt., 709 Highland, Salina.
Huntley, Leslie L., Capt., 612 State St., Larned.
Irby, Pratt, Capt., 209 S. Main St., Ft. Scott.
Jones, Sam, Capt., 1825 Ash St., Hutchinson.
Loyd, Dale U., 1st Lt., St. Francis Hospital, Wichita.
Maser, George R., Capt., 5105 W. 65 Ter., Overland Park.
Nienstedt, John F., 1st Lt., Hartford.

Kentucky

Fearing, Oliver H., Capt., 2536 Algonquin, Ashland.
Goldstein, Isadore, Capt., 105 E. Oak St., Louisville.
Hurt, Lawrence E., Major, 169 Romany Rd., Lexington.
Kanner, Irving F., Major, 208 Security Trust Bldg., Lexington.
Lawson, Reuben N., Major, 139 Broadway, Lawrenceburg.
Mullen, Alvin B., Lt. Col., Waverly Hills.
Oettinger, Leon Jr., 1st Lt., 311 S. Hanover Avenue, Lexington.
Rawlings, Frederick P. Jr., 1st Lt., Trenton.

Louisiana

Bombet, Charles N., Major, 408 S. 10th St., Baton Rouge.
Bowie, Eleazar R., Lt. Col., 5345 St. Charles, New Orleans.
Bres, Edward S. Jr., Capt., 388 Broadway, New Orleans.
Brown, James F., Capt., 639 Boulevard, Lake Charles.
Butker, Henry G., Major, 1201 Canal Bldg., New Orleans.
Casteix, Martial B. Jr., Major, 3025 Carondelet St., New Orleans.
Dozier, Horace B., Major, Charity Hospital, New Orleans.
Holloman, Walter G., Major, City Hall, Monroe.
Lindner, Henry J., Major, 710 N. Carrollton Ave., New Orleans.
Marks, Hippolyte P. Jr., Capt., 1012 Broadway St., New Orleans.
Martin, Jean B. Jr., Capt., St. Charles Parish, Hahnville.
Nabos, John F., Capt., 2829 Bruxelles St., New Orleans.
Nicholas, Stuart N., Capt., 1729 Line Ave., Shreveport.
Ochs, Louis Jr., Lt. Col., 2420 State St., New Orleans.
Ogaard, Adolph T., Major, 1430 Tulane Avenue, New Orleans.
Prejean, James L., Lt. Col., Sunset.
Rogers, Eugene S., Capt., 112 College St., Minden.
Salatich, Malter A., Capt., 1304 S. Carrollton Ave., New Orleans.
Sauer, Curtis E., Major, 208 Williams Blvd., Kenner.
Sherwood, Thomas C., Capt., Southern Baptist Hospital, New Orleans.
Snelling, John G. Jr., Lt. Col., 2101 Marie Place, Monroe.

PHYSICIANS SEPARATED FROM SERVICE

Maryland

Jones, Arthur F., Capt., 329 Cumberland St., Cumberland.
Kleiman, Norman R., Capt., 1101 N. Fulton Ave., Baltimore.
Post, Laurence C., Capt., 7105 York Road, Baltimore.
Rosenbaum, Irving Jr., Major, 423 Fayette St., Cumberland.
Sewell, Webster, Capt., Norbeck RFD, Rockville.
Turner, Thomas B., Col., 316 Paddington Road, Baltimore.
Urist, Marshall R., Major, 508 N. Broadway, Baltimore.
Watson, William G., Major, 612 N. Washington St., Baltimore.

Massachusetts

Barrett, Raymond L., Lt. Col., 23 Maple St., Springfield.
Bateman, William A., Major, 528 Andover St., Lawrence.
Blouin, Alfred R., 1st Lt., Beanes' Lane, Northbridge.
Bourgeault, Oscar A., Capt., 187 Chestnut St., Holyoke.
Bradford, Charles H., Capt., 220 Beacon St., Boston.
Brown, Morton G., Lt. Col., 250 Corey Rd., Brighton.
Buono, Charles L., Capt., 98 Beverly Rd., Worcester.
Burnett, Charles H., Major, Mass. General Hospital, Boston.
Bush, Charles W. Jr., Capt., 293 Eliot St., Milton.
Chofnas, Irving, Capt., 30 Walnut Park, Roxbury.
Chute, Richard, Lt. Col., 78 Upland Rd., Brookline.
Clark, Theodore D., Capt., 101 Highland Ave., Newtonville.
Clement, Howard R., Major, 97 Binney St., Boston.
Collins, Wylie L., Major, 17 Broad St., Nantucket.
DeCesare, Frank J., Capt., 96 Vermont St., Methuen.
Dodge, Richard S., Capt., Greene St., Canton.
Duffy, Frank K., Capt., 73 Pine St., Palmer.
Dyer, Edward C., Major, Children's Hosp., Boston.
Evans, Lloyd R., Capt., 360 Riverway, Boston.
Flumerfelt, John M., Major, 13 Holyoke St., Cambridge.
Flynn, Simon A., Capt., 79 W. Forster St., Melrose.
Friend, Dale G., Col., 114 Riverway St., Boston.
Goggio, Alfred F., Major, Peter Bent Brigham Hosp., Boston.
Guralnick, Eugene, Major, 87 Maple St., Roxbury.
Howard, Donald O., Major, Mass. Eye & Ear Infirmary, Boston.
Jaffee, Isadore H., Capt., 1705 Commonwealth Ave., Brighton.
Johnson, Elwood G., Major, 8 Tavern Rd., Waltham.
Kavanah, James S., Major, 81 Arnold St., Methuen.
Kneisel, John J., Major, 721 Huntington Avenue, Boston.
Kochanek, Joseph M., Capt., 34 Kazbeck St., Indian Orchard.
Kyle, Laurence H., Capt., E. Main St., Huntington.
Lightfoot, John H., 1st Lt., 78 Madison St., Fall River.
McGahey, Claud E., Capt., 14 Old Dee Rd., Cambridge.
Maher, Joseph J., Capt., 228 Brook Rd., Milton.
Meister, Abraham J., Lt. Col., 748 Bridge St., Lowell.
O'Brien, Walter M., Major, 1230 Hancock St., Quincy.
Olinick, Stanley L., Capt., 110 Madison St., Fall River.
Reder, Benjamin, Capt., 1022 Robeson St., Fall River.
Richards, Robert L., Major, 93 Marshall St., Watertown.
Rogers, Augustine T., Capt., 11 Summit St., Hyde Park.
Rosenheim, Frederick, Capt., 1 Clover St., Belmont.
Rubin, Abraham L., Lt. Col., 29 Commonwealth Ave., Pittsfield.
Ryan, Thomas F., Capt., Housatonic.
Simeone, Fiorindo A., Lt. Col., Peter Bent Brigham Hospital, Boston, (Home: Sackett Point Road, North Haven, Conn.)

Michigan

Anderson, Walter L., Major, 4411 Kensington Ave., Detroit.
August, Harry E., Major, 538 Maccabees Bldg., Detroit.
Bicknell, Edgar A., Capt., 13225 Birwood Ave., Detroit.
Blocksma, Ralph, Capt., 739 S. Prospect Ave., Grand Rapids.
Boyd, John O. Jr., Capt., 1206 Bethune W., Detroit.
Brooks, Nathan, Capt., 13725 Dexter Blvd., Detroit.
Burton, Horace F., Capt., East Tawas.
Clifford, Robert P., Capt., 10621 Lakepointe St., Detroit.
Diskin, Herman E., Capt., 3227 Fullerton Ave., Detroit.
Dowd, Bennard J., Capt., 1702 Greenlawn Ave., Kalamazoo.
Drolett, Donald J., Capt., 1623 W. Main St., Lansing.
Eaton, Robert M., Capt., 243 Aurora St. S.E., Grand Rapids.
Faulconer, Albert Jr., Major, 330 Walnut St., Rochester.
Fisher, Gordon F., Capt., 510 S. Jefferson St., Hastings.
Hall, Robert F., Capt., 1418 Fourth St., Bay City.
Harrington, Lawrence F., Capt., 5205 S. Martindale St., Detroit.
Knoch, Hubert S., Capt., 14149 E. Jefferson Ave., Detroit.
Koop, Chester S., Capt., Pinecrest Sanatorium, Powers.
La Core, Ivan A., Major, 18968 Northlawn, Detroit.
Levin, David M., Capt., 8821 Dexter Blvd., Detroit.
Patmos, Bernard, Capt., 138 E. Maumee, Adrian.
Schoenfeld, John B., Lt. Col., Cranbrook School, Bloomfield Hills.
Thieme, Elliott T., Lt. Col., 3 Geddes Heights, Ann Arbor.
Tuttle, Jay F., Major, New Berry State Hosp., Newberry.

Minnesota

Anderson, William H., Capt., 6th Avenue, E., Alexandria.
Ausman, Duane R., Capt., 1531 Portland Ave., St. Paul.
Berkson, Joseph, Col., 437 14th Ave. S.W., Rochester.
Boyer, Samuel H. Jr., Major, 2725 E. 6th St., Duluth.
Breslow, Lester, Capt., 24 11th Ave. N.W., Rochester.
Christensen, Llewellyn E., Capt., 214 Manitou St., Northfield.
Condon, William B., Major, Mayo Clinic, Rochester.
Dry, Thomas J., Major, Mayo Clinic, Rochester.
Fischer, Verrill J., Capt., 600 S. Brimhall St., St. Paul.
Graham, Frederick M., Capt., Mayo Clinic, Rochester.
Helferty, John K., Major, Tracy.
Hilger, David W., Major, 121 6th Ave. N.W., Rochester.
Lillie, John C., Major, % Midfields, R 2, Rochester.
Nickel, Walter R., Major, Mayo Clinic, Rochester.
Richardson, Robert J., Capt., Rushford.
Saliterman, Bernard I., Capt., 1423 Lakeview Ave., Minneapolis.
Scherling, Sidney S., Lt. Col., Taylors Falls.
Smith, Lucian A., Major, Mayo Clinic, Rochester.
Thompson, Floyd A., Major, 245 S. Snelling Ave., St. Paul.

Mississippi

Barron, James, Capt., 404 Alexander St., Indianola.
Beck, Otis H., Major, 1210 Main St., Greenville.
Boggess, Julian E. Jr., Capt., Macon.
Bolton, Eldon L., Lt. Col., 1118 West Beach, Biloxi.
Crull, Luther P., Capt., 1839 St. Mary St., Jackson.
Davidson, Arthur C., Capt., 1303 Main St., Greenville.
Davis, Floyd M., Capt., Van Vleet.
McRae, Matthew E., Capt., 1412 7th Ave., Laurel.

Missouri

Bondurant, Alpheus J., Major, Vet. Admin. Fac., Jefferson Barracks.
Boots, Roger H., Capt., 4954 Columbia St., St. Louis.
Dietrich, Karl D., Major, 16 Bingham Road, Columbia.
Ellis, Ralph C., Major, 3723 Wyoming, Kansas City.
Harbison, Samuel P., Capt., 600 S. Kingshighway, St. Louis.
Harris, Russell D., Lt. Col., 1638 S. Maple St., Carthage.
Keown, Kenneth K., Major, RFD 2, Tebbetts.
Knight, William A. Jr., Capt., 8528 Hall's Ferry Rd., St. Louis.
Martin, Charles E., Capt., 4501 Parkdale Drive, Normandy.
Morse, Marvin W., Capt., 2832 Doniphan St., St. Joseph.
O'Leary, James L., Major, 4931 MacPherson Ave., St. Louis.
Potashnick, Robert, Capt., 5879 Maffitt Ave., St. Louis.

Nebraska

Cochran, Robert M., Major, 371 N. 33rd, Lincoln.
Corkle, Robert F., Capt., 2488 N. 47th Avenue, Omaha.
Dent, Townsend E., Capt., 402 S. Sycamore St., North Platte.
Ewing, Ben E., Capt., 923 S. 10th St., Nebraska City.
Green, Ralph D., Major, Vet. Adm., Lincoln.
Hall, Robert W., 1st Lt., 561 S. 35th Avenue, Omaha.
Holiday, Andrew T., Capt., 1834 Prospect St., Lincoln.
Lovgren, Robert E., Capt., 2444 Newport Avenue, Omaha.
Purvis, Donald F., Capt., Fullerton.
Reed, Elmer B., Capt., 3240 W St., Lincoln.
Sharrar, Lynn E., Major, 605 Security Mutual Bldg., Lincoln.
Spradling, Richard L., Capt., State Hosp., Lincoln.
Still, Richard M., Major, 417 Woodman Bldg., Lincoln.
Thompson, Charles E., Major, 677 J. E. George Blvd., Omaha.
Victor, Samuel A., Capt., 112 N. 38th St., Omaha.

North Carolina

Eckbert, William F., Capt., Crossnore.
Erwin, Evan A. Jr., Capt., Laurinburg.
Jones, Craig S., Major, N. Main St., Cliffside.
Martin, Ben F., Capt., Roxboro.
Mock, Charles G., 1st Lt., 728 Mocksville Avenue, Salisbury.
Query, Luke W Jr., 1st Lt., Route 4, Charlotte.
Nanzetta, Leonard, Capt., 1915 Perry Ave., Wilmington.
Shuford, Jacob H., Capt., 1540 18th St., Hickory.
Tatum, Roy C., Col., 332 S. Center St., Statesville.

Oklahoma

Best, Ralph L., Capt., 1612 E. 12th St., Tulsa.
Cordonnier, Byron J., Major, 1406 W. Wabash, Enid.
Darrough, James B., Capt., 101 S. Wilson, Vinita.
Davis, Wesley W., Capt., Fort Cobb.
Deaton, Andy N., Major, 1301 S. Seminole St., Wewoka.
Emenhiser, Lee K., Lt. Col., 1106 M. Arts Bldg., Oklahoma City.
England, Myron C., Major, 1011 Main St., Woodward.
Gibbs, Allen G., Lt. Col., 2321 N.W. 25th St., Oklahoma City.
Gore, W. A., Major, U. S. Vet. Adm. Fac. Hosp., Muskogee.

PHYSICIANS SEPARATED FROM SERVICE

Oklahoma—Continued

Hammond, James H., Lt. Col., 6521 E. Latimer Pl., Tulsa.
Munal, John E., Major, 408 Country Club Drive, Holdenville.
Rucker, Ralph W., Major, 1429 Valley Rd., Bartlesville.
Shaw, James F., Capt., Box 246, Wetumka.
Shircliff, Edward E., Major, 121 N.W. 14th, Oklahoma City.
Waltrip, Powhatan M. Jr., Major, 615 Jefferson, Lawton.
Williams, Gordon D., Capt., 424 N. 5th St., Weatherford.

Rhode Island

Campbell, Walter E., 1st Lt., 28 Ravenswood Ave., Providence.
Celestino, Pasquale J., Capt., 19 Pearl St., Westerly.
Conde, George F., Capt., 110 Cathedral Ave., Providence.

South Carolina

Ball, Robert W., Lt. Col., 925 Main St., Columbia.
Brodie, Joseph E., Capt., 124 Sumter Court, Greenwood.
Burn, Edward M., Major, 133 Spring St., Charleston.
Converse, Joseph I., Capt., 709 Crescent Ave., Greenville.
Daniel, John F., Major, 1021 S. Main St., Greenwood.
Driscoll, Robert H., Lt. Col., 915 Glenn St., Newberry.
Harrison, Albertus F., Major, McLeod Infirmary, Florence.
Jeanes, James G., Capt., 89 W. Main St., Clinton.
Kline, Bernard, Capt., Hardeeville.
McFall, Thomas C., Capt., 150 Ashley Ave., Charleston.
Owens, Frank C., Major, 431 Edisto Ave., Columbia.
Price, George W. Jr., Major, 409 Andrews Bldg., Spartanburg.
Smith, Daniel L. Jr., Capt., 166 Alabama St., Spartanburg.

Tennessee

Dougall, John Mac, Lt. Col., 902 Madison Avenue, Memphis.
Fields, James O., Capt., 405 Highland, Milan.
Finks, Robert M., Major, Vanderbilt Hosp., Nashville.
Grizzard, Thomas, Major, 2005 Blakemore Avenue, Nashville.
Hendrick, Jim G., 1st Lt., 61 N. Tucker, Memphis.
Hickey, Homer D., Capt., 501 Kilmer St., Chattanooga.
Jenkins, Harry H., Col., 1931 Laurel Avenue, Knoxville.
Loveless, J. A., Major, Davidson Co. Health Dept., Nashville.
Mann, Malcolm J., Capt., Vanderbilt Hosp., Nashville.
Massengill, Michael D. Jr., Capt., 422 Shelby St., Kingsport.
Miller, Cleo M., Lt. Col., Shelton Avenue, Nashville.
Murphey, Francis, Lt. Col., 899 Madison Avenue, Memphis.
Polk, Raymond W., Capt., 102 N. Belvedere, Memphis.
Rainey, William T., Lt. Col., Tiptonville.
Ransmeier, John C., Capt., Vanderbilt U. Hosp., Nashville.
Richardson, Guy C., Major, 219 Lynwood St., Bristol.

Texas

Alfieri, Anthony L., Capt., 3427 Cedar Springs, Dallas.
Arnim, Landon C., Capt., 123 Oleander St., Corpus Christi.
Atmar, Robert C., Major, 206 Canterbury, San Antonio.
Austraw, Henry H., Capt., 2224 Dorrington St., Houston.
Barekman, William H., Capt., 596 N. Clinton Ave., Stephenville.
Basom, William C., Major, 410 Roberts-Banner Bldg., El Paso.
Block, Harold M., Major, 709 Spring St., Weatherford.
Bohmfalk, Stanley W., Capt., 2506 Avenue C, Wichita Falls.
Borough, Lester D., Major, 3532 Kent, Ft. Worth.
Breck, Louis W., Major, 1800 Elm St., El Paso.
Brooks, Jesse M., Capt., Box 389, Atlanta.
Buchholz, Ransom R., Major, Georgetown.
Byram, Dan H., Major, 3137 8th St., Port Arthur.
Carroll, Roland B., Major, 401 5th Avenue, Port Arthur.
Coggeshall, Howard C., Major, 3701 Maple Avenue, Dallas.
Dreibrodt, Ben A., Capt., 433 Hammond Ave., San Antonio.
Du Boise, Otho K., Capt., 113 S. Main St., Lockhart.
Dufner, Romie M., Capt., 1024 Steves Ave., San Antonio.
Gill, James P., Lt. Col., 519 Med. Professional Bldg., Corpus Christi.
Glover, Frank S., Capt., 411 W. Alabama, Houston.
Gray, George A., Major, City Hall, Abilene.
Jenkins, Joseph N. Jr., Capt., 1220 N. 6th St., Waco.
Jenson, Alfred J., Capt., 2305 10th St., Lubbock.
Johnson, Max E., Capt., 133 E. Huisache St., San Antonio.
Jordan, Robbie C., Major, Austin State Hosp., Austin.
Klanke, Charles W., Capt., 8028 Park Place Blvd., Houston.
Lindsey, David C., Capt., 1010 E. Allen Ave., Fort Worth.
Littell, George S., Lt. Col., 3520 Fairmount Ave., Dallas.
McKay, Haden E. Jr., Capt., Humble.
Mood, Francis A., Capt., Nocona.
Pierce, Alexander W., Capt., 3512 Lake Park Drive, Box 936, Wichita Falls.
Powell, J. C. Jr., Capt., San Antonio State Hosp., San Antonio.
Renshaw, Horace S., Major, 2913 Alton Rd., Fort Worth.
Rosenblatt, W., Lt. Col., 126 Pembroke Lane, Wichita Falls.

Texas—Continued

Simonson, Sigwert W., Capt., Dallas.
Villareal, Leopoldo, Major, 512 Gregory Way, El Paso.
Wright, Harry E., Lt. Col., Mineral Wells.
Wyatt, Malcolm H., Capt., 1500 Jefferson St., Amarillo.

Utah

Ball, John M., Capt., 735 Emerson Ave., Salt Lake City.
Berman, Harry, Major, 218 First Security Bank Bldg., Ogden.

Vermont

Allen, Howard H., Capt., Greensboro.
Crandall, Albert J., Major, 24 Maple St., Essex Junction.
Emmons, James E., Major, 85 Main St., Newport.
Ferriter, William B., Capt., 25 Spruce St., Brattleboro.
Hammond, James P., Major, 34 Mt. Anthony Rd., Bennington.
Hyde, Edgar R. Jr., Capt., 6 Byam St., Northfield.
Hyde, Robert W., Major, Fairfax.

Virginia

Amole, Charles V., Capt., 907 S. St. Asaph St., Alexandria.
Babb, Emerson M., Capt., Ivor.
Berlin, Erwin S., Capt., 350 W. Main St., Wytheville.
Bowers, George S., Major, Rustburg.
Brown, William A. Jr., Capt., 101 Mt. Vernon, Portsmouth.
Brownley, Harvey C., Lt. Col., 3323 Woodridge Place, Lynchburg.
Colton, Warren A. Jr., Capt., USVH, Kecoughtan.
Ham, George C., Capt., 1617 Oxford Rd., Charlottesville.
Hurt, John O., Capt., 419 Creston Rd., Roanoke.
Jackson, Roger A., Major, 213 Parkway Avenue, Winchester.
Lisle, Leslie M., Capt., 815 Prince St., Alexandria.
Mallett, Robert B., Capt., Orange.
Montague, John W., Capt., RFD 1, Salem.
Packer, Bernard D., Major, 3904 Seminary Ave., Richmond.
Page, Sidney G. Jr., Major, 5820 Lakeside Ave., Richmond.
Richardson, James S., Capt., Richlands.
Sollod, Norman, Capt., 22 Center Hill, Petersburg.

Washington

Buckner, Hubbard T., Col., 208 Cobb Bldg., Seattle.
Clanton, Edward L., Major, Rockford.
Clark, Thomas H., Capt., King County Hosp., Seattle.
Hildebrand, Leslie E., Capt., 1708 E. 8th Ave., Spokane.
Hopke, Harold LeVerne, Capt., 813 Murdock, Sedro Woolley.
Jared, Myron S., Lt. Col., 2205 Warren Ave., Seattle.
MacKay, Alexander R., Capt., 1309 Ferris Court, Spokane.
Pence, Lawrence C., Major, 722 E. 20th Avenue, Spokane.
Phillips, James Y., Capt., 2517 42nd Avenue, North, Seattle.

West Virginia

Beaumont, Godfrey L., Capt., 2d Ave., New Cumberland.
Chandler, Arthur C., Capt., 1562 Virginia St., Charleston.
Cooke, William L., Major, 5 Roller Rd., Charleston.
Doyle, John E., Major, Greenwood.
Frye, Robert R., Capt., 117 Furbes Ave., Mannington.
Jones, Robert H., Lt. Col., 42 Country Club Road, Fairmont.
Pushkin, Willard, Capt., 1528½ Lewis St., Charleston.

Wisconsin

Becker, Walter T., Lt. Col., 4144 N. 15 St., Milwaukee.
Brock, Elmer H., Major, 4574 W. Bluemound Rd., Milwaukee.
Brown, Robert J., Capt., Cazenovia.
Christiansen, Rudolph E., Capt., 805 E. 5th St., Superior.
Erdmann, Norman C., Capt., 1522 Torrison Drive, Manitowoc.
Fast, John G., Capt., St. Croix Falls.
Greiber, Marvin F., Lt. Col., Fennimore.
Ingwell, Clayton L., Capt., Deerfield.
Kaiser, Lloyd F., Major, 411 E. Frederick St., Rhinelander.
Kaufman, Bernhard, Capt., 201 E. Armour Ave., Milwaukee.
Kendall, Thurman E., Capt., 2362 N. 91st St., Wauwatosa.
Klotz, Arthur P., Capt., Gillett.
Lambert, Joseph W., Capt., 726 7th Avenue, Antigo.
Levin, Harlan M., Capt., Box 207, Darien.
Perssion, Leo B., Capt., Winnebago State Hosp., Winnebago.
Pippin, Leo M., Capt., 400 Superior St., Boscobel.
Stadel, Ernest V., Capt., 527 Vine St., Reedsburg.
Wilkinson, Philip M., Major, 114 E. Wisconsin, Oconomowoc.

Alaska

Dahl, Lewis K., Capt., Skagway.
Fritz, Milo H., Major, Box 1929, Ketchikan.
Mundt, Raymond, Major, U. S. Indian Hospital, Juneau.

ORGANIZATION SECTION

ANNUAL CONFERENCE OF SECRETARIES AND EDITORS OF CONSTITUENT STATE MEDICAL SOCIETIES

Dr. Lyman W. Mason, editor of the *Rocky Mountain Medical Journal*, Presiding

(Concluded from page 719)

Friday, February 8

EDITORIAL CONFERENCE

After an opening address by Dr. George F. Lull, Associate General Manager of the American Medical Association, Dr. Mason presented a statement urging leadership by editors of state medical journals. He said, in part, "It seems to me that the chief function of the state and regional journals is the dissemination of medical news and medical knowledge and developing a coordinated front in solving our problems to the public and to legislative bodies. Certainly there ought to be some attempt within the realm of the editor to shape general medical opinion. These efforts should stem from some consensus which has been urged in meetings like these and from the leadership of the American Medical Association, the Board of Trustees and the House of Delegates."

Dr. Mason then introduced Dr. Henry A. Davidson, editor of the *New Jersey State Medical Journal*, who conducted a clinic on editorial problems. The problems discussed included consideration of a "Letters to the Editor" page, discussed by Dr. Carl B. Drake (Minnesota), Dr. Robert N. Nye (Massachusetts), Dr. George Kosmak (New York), Dr. Holman Taylor (Texas), Dr. Herman M. Jahr (Nebraska), Dr. Wilfrid Haughey (Michigan), Dr. Creighton Barker (Connecticut) and Dr. P. E. Blackerby (Kentucky).

Next was the receipt of books for review, the publication of reviews and the disposal of the books. This was discussed by Drs. Wilfrid Haughey (Michigan), Everett M. George (Iowa), Henry A. Davidson (New Jersey), R. B. Anderson (Texas) and Wingate Johnson (North Carolina).

The preparation and publication of editorials were discussed by Drs. Henry A. Davidson (New Jersey), Holman Taylor (Texas), Robert N. Nye (Massachusetts), Thomas Murdock (Connecticut), George Kosmak (New York), Walter Donaldson (Pennsylvania) and Creighton Barker (Connecticut).

The next subject discussed was the reporting of county society activities, in which Drs. Henry A. Davidson (New Jersey), Herman M. Jahr (Nebraska), George Kosmak (New York), Holman Taylor (Texas), Stanley Weld (Connecticut), Stewart G. Thompson (Florida) and Wingate Johnson (North Carolina) participated.

The publication of the activities of the Woman's Auxiliary was considered in discussions by Drs. Henry A. Davidson (New Jersey), Robert N. Nye (Massachusetts) and P. P. Chase (Rhode Island). Incidental to this discussion was a consideration of the publication of poetry.

The meeting concluded with a presentation of the regulations on advertising of the Cooperative Medical Advertising Bureau.

Saturday, February 9

The session of February 9 opened with a consideration of public relations published in The Journal for February 23, page 509.

Following this presentation the conference considered prepayment medical care plans. "Progress Toward a National Medical Prepayment Plan" was presented by Jay Ketchum, executive vice president of the Michigan Medical Service. The subject was discussed by Drs. A. W. Adson (Minnesota), Creighton Barker (Connecticut), Morris Fishbein (Chicago), Walter Donaldson (Pennsylvania), A. J. Bowles (Washington), Frank Borzell (Pennsylvania), C. G. Spivey (South Carolina) and Thomas Murdock (Connecticut).

Postwar Medical Service

MINUTES OF MEETING OF JANUARY 12

Chicago, Illinois

The Committee on Postwar Medical Service met in the Board of Trustees Room of the American Medical Association Building, 535 North Dearborn Street, Chicago, Saturday, January 12, and was called to order by the Chairman, Dr. Ernest E. Irons, at 10:15 a. m. Those present were:

Dr. Walter L. Bierring	Major Gen. George F. Lull
Mr. Graham L. Davis	Dr. J. J. Moore
Capt. William E. Eaton	Col. William N. Piper
Dr. Morris Fishbein	Father A. M. Schwitalla, S.J.
Dr. E. L. Henderson	Dr. R. L. Sensenich
Mr. J. W. Holloway Jr.	Dr. H. H. Shoulders
Dr. Ernest E. Irons	Dr. Austin E. Smith
Dr. Victor Johnson	Lieut. Col. John K. Voegtly
Dr. B. R. Kirklin	Col. Floyd L. Wergeland
	Dr. Olin West

Educational Internship and Residency Opportunities.—Dr. Johnson reported that the card reporting system inaugurated by the office of the Council on Medical Education and Hospitals was proving to be very helpful; that thirty to fifty returning medical officers come into the office every week and from one to two hundred written inquiries are received from such officers and answered each week. Dr. Johnson believed that at the present rapid rate of discharge it will be difficult to provide residencies in special fields for all desiring them and also that it appears to be doubtful that all those requesting certain residencies are qualified. He thought that there would be about fifteen thousand who would want residencies of some sort. Dr. Johnson stated that discussions had been carried on with the Advisory Board for Medical Specialties and a program worked out whereby the Council would approve certain residencies on a temporary basis and thus avoid the six to eight months delay that would be caused if approval procedures were to go through the regular channels. The plan has been approved by the Council on Medical Education and Hospitals and by the executive committee of the Advisory Board for Medical Specialties but still awaits the approval of the individual specialty boards.

With respect to the maintenance of residency quotas in the individual hospitals, Dr. Johnson informed the Committee that the Procurement and Assignment Service had recently repeated its assertion that veterans would not be counted in the quotas at any time and that it will be announced soon that all quotas will be dispensed with about April 1 so that there will be no interference with the placement of veterans.

Dr. Johnson further stated that the deceleration of medical school programs is now possible as far as the Navy and Selective Service are concerned. The Army has been urged to discontinue the Army Student Training Program and that will be done; in fact, a new directive has been issued which announces definitely the discontinuance of the program on June 30, 1946. Junior, sophomore and freshman students now in the medical schools under the A. S. T. P. will be demobilized on March 30, after which all schools can decelerate.

Following Dr. Johnson's statement there was discussion concerning approval of the temporary residency plan by the individual specialty boards, and Dr. Kirklin said he had no doubt that the boards would approve it but that the plan should not be continued any longer than the emergency exists. The Chairman agreed with Dr. Kirklin, stating that the basic training demanded by the specialty boards is for the protection of the candidate and not of the boards, and that while he was much in favor of the temporary approval plan he thought it should be emphasized officially that it is only an emergency measure. Dr. Kirklin pointed out that the candidates, under the temporary approval plan, still would have to take the examinations. The Chairman stated that a further report on the situation would be expected at the next meeting.

Enrolment of Medical Students.—Dr. Johnson, Chairman of the Subcommittee on Enrolment of Medical Students, reported that studies which have been made indicate that there is an entirely inadequate supply of students for 1946 classes; that data concerning this had been presented to the Inter-Agency Committee, but little encouragement was received, and that it still appears that no adjustment will be made by Selective Service toward the deferment of premedical students.

The Chairman presented to the Committee a telegram which had been sent, pursuant to instructions given by the House of Delegates of the American Medical Association, to the President of the United States, the Secretary of War, the Secretary of the Navy and many other officials of the government urging the correction of the regulations of Selective Service which make no provision for the deferment of young men qualified for entrance into premedical education, as follows:

The House of Delegates of the American Medical Association in official session adopted the following statement: "The American Medical Association in common with all other medical groups views with apprehension the effects of the present regulations of Selective Service which make no provision for the deferment of young men qualified for entrance into premedical education. The American Medical Association believes that continuation of this policy will inevitably result in a lessened production of doctors at a time when more rather than fewer will be urgently needed. At this time, when veterans' needs, increased demands of military establishments for more doctors, and the greatly intensified concern with national health exist, the present program of Selective Service reducing the supply of doctors is indefensible. We therefore urge that the Military Affairs Committee of the House of Representatives and of the Senate take immediate steps to correct this situation in the interests of the public health and welfare." The House of Delegates directed that a copy of the statement be forwarded to each member of the Committee on Military Affairs of the House of Representatives and of the Senate, to the President, the Secretary of War, the Secretary of Navy, the Director of Selective Service and the Director of the Office of War Mobilization and Reconversion.

Replies to the telegram were received from many of those to whom it had been sent, and some of the replies indicated that the writers were in complete agreement with the Association's contentions. However, a reply received from the Acting Secretary of War, Mr. Kenneth C. Royall, read by the Chairman, was as follows:

On December 10 the American Medical Association, through you as its Secretary, dispatched identical telegrams to President Truman, to the Secretary of War and to the Director of Selective Service. The President referred the telegram addressed to him to the Secretary of War. The Director of Selective Service replied on December 14 to the telegram addressed to him. A copy of his reply has since been furnished to the Secretary of War, who concurs in the position therein taken.

Secretary Patterson is appreciative of the most helpful assistance repeatedly rendered to the War Department by the American Medical Association, which has been of especial value during the war crisis. However, after personally considering the Association's telegram, he did not feel that it would be sound policy to permit preferential treatment of any special group of individuals as to exemption from Selective Service, as this would be discriminatory against other groups and would, of course, lead to increased demands for special exemptions.

Further it is believed—and hoped—that, as stated in the letter of the Director of Selective Service, the present return of veterans will very largely remove the condition with which the Association is concerned.

Father Schwitalla thought it would be well to try to find out just how many G. I.s there now are in college who plan to go on to medical school and was informed by Dr. Johnson that Dr. Harold S. Diehl had attempted to do this and had compiled some figures from colleges which normally supply between 15 and 20 per cent of the freshman classes to the medical schools. Dr. Diehl's figures indicate that these colleges have about one fourth of their usual supply of all types of premedical students, including G. I.s, who form a very small proportion of the whole. Selective Service did not appear to be impressed with the significance of the survey, maintaining that it did not represent what will be the case later on in 1946. In response to a suggestion from Father Schwitalla, Dr. Johnson said the Council on Medical Education and Hospitals would attempt to make a more comprehensive survey and, if possible, report thereon at the next Committee meeting.

Surplus Medical and Hospital Supplies.—Father Schwitalla, Chairman of the Subcommittee on Surplus Medical and Hospital Supplies, made the following statement: A meeting was held on December 13 of the Advisory Committee of the Surplus Property Board. This was the first time such a meeting has been held, and it was well attended. Existing regulations were discussed, particularly Regulation number 14 pertaining to disposal of property to nonprofit institutions, implementing paragraph 13 of the basic law (Public Law 457). There was also discussion by the Advisory Committee of the second set of regulations, having to do with the designation of the disposal agency. The question of who holds title to the property after it is called surplus was cleared up by a definition that the title passes into the hands of the Reconstruction Finance Corporation. The Army gives up all title to it and the money that comes in goes to the R. F. C. Regulation number 1 takes care of that point. Regulation number 15 takes care of disposal of real estate and affects whole hospitals; bids are being made for hospitals by groups of physicians. A struggle has been going on within the Surplus Property Administration with reference to centralization of authority, inventories and information, which are all decentralized. There are now thirty-one disposal agencies each having a measure of responsibility, which apparently accounts for the fact that with reference to surplus property it is difficult to make any general statement that affects the whole country. A matter for consideration was to what extent the government should go into the reassembling of surplus material, a process that might be necessary because of the manner in which most of it is stored. The Advisory Committee also discussed the matter of procedure and devised a new system. Under the old method an application for medical or hospital supplies originated with an individual or an institution. From the individual or the institution it went to the U. S. Public Health Service, which passed on the application, and from the Public Health Service it went to the Surplus Property Administration and, after approval by that agency, to the R. F. C. Thus four steps were required before final action could be taken. The Advisory Committee thought there could be no good reason why the applications could not be handled by one office, and that idea was embodied in a resolution outlining a new and simplified procedure. It is unfortunate that the final decision has not yet been made known. The material now available is only a small percentage of the thirty billion dollars' worth of property that finally will be available for disposal as surplus.

In the discussion following Father Schwitalla's statement, Dr. Fishbein stated that those responsible for disposal were putting most of their effort at present on selling the larger items—whole hospitals or buildings at one time—and are interested right now only in the mass disposal of such items.

In reply to a question from Mr. Davis concerning the amount of surplus medical and hospital supplies and equipment that actually would be usable, Father Schwitalla stated that, between July 31, 1944 and July 31, 1945, $18,900,000 worth of professional and scientific apparatus was declared surplus—mostly to dealers—and that during the same period $12,200,000 worth of that amount was inventoried but was not in condition that it could be offered for sale. In the same period $8,100,000 worth of drugs and medicines was inventoried but has not been offered for sale. Dr. Fishbein remarked that surplus drugs and medicines must be standardized through the Food and Drug Administration before being offered for sale.

Captain Eaton, in describing the method of disposal by the Navy, doubted that there would be much surplus medical property available through the Navy Department. He said that much of it was overseas and very likely would be left there as not worth bringing back, and that the Navy probably would itself use most of its own surplus medical property.

The Chairman requested the Subcommittee to keep working on the matters with which it has been concerned and report again at later meetings.

Bureau of Information.—Dr. West reported that the Bureau of Information is going ahead with the accumulation of information and has recently taken on some work incident to the activities of the Committee on Rural Medical Service. He stated that there is great desire on the part of farm organizations to make contacts with state and county medical societies to work out some plan for medical service in rural areas, and that the representatives of the farm organizations are very intelligent and sincere people. It occurred to Dr. West that the Committee on Postwar Medical Service might become a part of the picture. He said that the records as they were

being developed in the Bureau of Information for a while seemed to encourage the hope that a number of men—more than expected—would be willing to settle in rural areas, but the proportion as evidenced by more complete data is gradually dwindling.

The number of visits to the Bureau from returning medical officers has greatly decreased, but it is anticipated that it soon will increase again. The Bureau is trying to be as helpful as possible in every respect. The correspondence coming to the Bureau contains many complaints from men who feel they are being unduly kept in service with nothing to do, some insisting that they never have had anything to do. Some of the complaints appear to be justified, but there is nothing that the Bureau of Information can do about this, and Dr. West felt sure that the Surgeon Generals of the Army and Navy have done and are doing all they possibly can to clear up the very complicated situation. It is probable that the Bureau of Information will be continued after this emergency for the purposes of the American Medical Association itself to gather information and data which can be used to advantage.

Father Schwitalla discussed the matter of rural medical service, saying that the Catholic Rural Life Conference had accomplished a great deal in getting people settled in rural areas and back on the farms. He also said that on the question of medical service in rural areas the people ask why it is that they cannot get a physician when they promise funds "and everything"; that the funds are there and hospitals have been erected, and still not enough doctors will settle in some places.

Dr. West stated that his impressions were slowly crystallizing into an opinion that one of the chief reasons why physicians cannot be retained in strictly rural areas is the lack of social and cultural contacts of the kind they most desire. Another phase of the matter, he said, is that some physicians go into country practice under contract with the provision that they can do all the private practice they wish but have no time for private practice.

Father Schwitalla asserted that one complaint of the farm groups is that they do not get any cooperation from the local medical and hospital groups. Dr. West mentioned that several of the state medical societies having medical service plans are trying to extend their service into rural areas.

After further discussion it was moved, duly seconded and carried that a representative of the Committee on Rural Medical Service be made a member of the Committee on Postwar Medical Service. (On request of the Chairman, Dr. F. S. Crockett of Indiana, Chairman of the Committee on Rural Medical Service, has accepted membership.)

Dr. Bierring mentioned as an important feature of the hospital construction measure—the Hill-Burton—the fact that the disposition of funds is going to be dependent on a careful survey in each state by local people, who will determine the need and whether future maintenance will be assured.

The Chairman said he would ask for a further progress report at the next meeting.

Veterans Administration.—Father Schwitalla, Chairman of the Subcommittee to Confer and Cooperate with the Veterans Administration, reported that he and Dr. Johnson, with Mr. Russ Clark of the American Hospital Association, had had another satisfactory conference with representatives of the Veterans Administration. Dr. Johnson had drawn up a statement for publication in THE JOURNAL which the Subcommittee had hoped by this time would have received approval from the Veterans Administration so that it might be released to THE JOURNAL at once but, although Mr. Stirling in a phone conversation had indicated that approval would be forthcoming immediately, it had not yet been received, and the Subcommittee was not in position, until receipt of such approval, to make any recommendation to the Committee.

The Chair entertained a motion, which was adopted, authorizing publication of the Subcommittee's report as soon as it becomes available. (NOTE.—The report of the Subcommittee was published in THE JOURNAL, January 26, pp. 216-218.)

The Chairman presented a letter addressed to the Committee on Postwar Medical Service and signed by eleven Army medical officers on duty with the Veterans Administration. The letter was in the nature of a protest against the inclusion of osteopaths in the Veterans Administration bill, H. R. 4717.

A telegram presenting a similar protest from officers at Bay Pines, Fla., was presented, and the Committee was informed that that communication had been forwarded to the Administrator of Veterans' Affairs in Washington.

There was extended discussion concerning various problems of the veteran medical officers, including the matter of payment by hospitals to residents, the adequacy or inadequacy of the stipend allowed hospital residents under the G. I. bill and the lack of facilities in and increased expense to hospitals that are trying to provide more residencies than normally. In reply to a question by Dr. Kirklin, Dr. Johnson stated that there still was a distinct shortage of residencies and that the shortage probably would increase during the next few months.

It appeared to be the consensus that all residents in hospitals should receive the usual stipends, and that whatever could be accomplished in the way of increasing subsistence payments allowed under the educational provisions of the G. I. bill should be attempted.

The Chairman stated that the Subcommittee was authorized to proceed and announced the addition to its membership of Mr. J. W. Holloway Jr., Director of the Bureau of Legal Medicine and Legislation of the American Medical Association.

Licensure.—Dr. Bierring referred to action taken by the Executive Committee of the Federation of State Medical Boards recommending "That the federation reaffirm its disapproval of admitting to licensure returning medical officers who are graduates of unapproved medical schools, except in those states where special licensure provision is made for such graduates." Another action of the Executive Committee, to be submitted to the federation for final approval, was "That the federation recommend to the member state boards and the District of Columbia requiring medical licensure for hospital residents a reconsideration and clarification of the purposes of hospital residencies as an educational feature, this to apply particularly to returning medical officers. If considered as a part of postgraduate training, that the duties of such positions be clearly defined in order to permit exemption from medical licensure."

A motion was adopted to appoint a subcommittee whose duty it would be to look into the matter of licensure of residents and of the refusal in some areas of county medical societies to take into membership without a probation period of anywhere from one to three years those medical veterans who move into their communities, sometimes on the advice of the Procurement and Assignment Service, and try to set up a practice.

The Chairman appointed the following subcommittee to look into these questions and report: Dr. Morris Fishbein, Chairman; Dr. Victor Johnson; Mr. J. W. Holloway Jr.

Mr. Davis summarized the situation in Michigan with respect to the licensure of residents. He stated that the licensing law in Michigan was passed in 1898 and there is nothing in it about licensing residents; that resident licensure was purely a regulation of the state licensing board, and that the attorney general of the state seems to have been finally convinced that there is nothing in the Michigan law to support it. He thought Dr. Bierring might look into various state laws and thus learn that the requirement of a license from residents in most if not in all of the states requiring them has been done under regulations of the licensing boards rather than under the law itself. Mr. Holloway said that as long as regulations are not in conflict with the actual law they have the complete effect of law, and he questioned the authority of a state board to exempt from license a resident who may be going to engage in the practice of medicine.

After further discussion hinging on the question of the returning medical officer who takes up a residency as a means of refreshing his medical knowledge being forced to pay a resident license fee, the Chairman requested Dr. Bierring to follow up the problem and report at the next meeting.

Assistance to the Philippines.—The Chairman asked for comments from the Committee members and for ideas as to anything further that might be done in the matter of rendering aid to the medical profession in the Philippines, mentioning the

report made by Dr. James E. Paullin at the December meeting of the Committee.

General Lull stated that a number of Philippine physicians are being sent to this country for training—about fifteen physicians from the Philippine army.

New Business.—The Chairman brought to the attention of the Committee several communications from medical officers still in service, both in the Army and in the Navy, complaining because of their prolonged and, to them, unnecessary retention in the armed forces. Captain Eaton said that the Navy officers still on duty outside the United States were beyond the jurisdiction of the Bureau of Medicine and Surgery, and the Surgeon General can do nothing about those now in the Pacific; that the men were being relieved just as fast as possible; that it is to be remembered that the Medical Corps of the Navy had expanded from a small number to a host, and that the number in the regular Medical Corps is absolutely inadequate to staff the Navy's own hospitals. Colonel Piper informed the Committee that, on Jan. 3, 1946, 20,483 medical officers had been discharged from the Army and 29,640 nurses from the Army Nurse Corps. General Lull stated that, in the European Theater of Operations, when a man is declared surplus he is sent to a port and as soon as he is at the port he is crossed off the ETO books, but nothing can be done for the men in the Pacific.

Actions of House of Delegates of American Medical Association.—It was reported by the Chairman that the report of the Committee on Postwar Medical Service presented to the House of Delegates of the American Medical Association at its meeting in December had received the approval and appreciation of the House, which expressed the hope that the Committee would be continued. He stated that the work of the Bureau of Information also had received commendation, and expression had been given to a hope that the Bureau might be continued and probably placed on a permanent basis.

The Chairman further informed the Committee that the House of Delegates had authorized the appointment of a Committee on Military Medical Service whose purpose it would be to look into the question of how military medical service might be aided in the postwar period and in the event of hostilities in coming years, and to evaluate military medical activities in the war just ended with the hope of creating an acceptable plan for the setting up of a military medical establishment in future emergencies which would avoid mistakes made in the recent past. He said that the new committee would be appointed by the Board of Trustees in February and the Committee on Postwar Medical Service would be informed.

Remarks of Liaison Members.—Father Schwitalla brought up the question of the future scope of the Committee on Postwar Medical Service, saying that if it turns out to be a committee of the postwar period not necessarily having a tie up with the war, other matters of immediate and important interest to the profession could be considered; that the Committee as now constituted with representatives of so many important medical organizations could become a valuable medium for the interchange of opinion among the various organizations represented, and that future objectives merited further definition.

The Chairman stated that the Committee had considerable unfinished business with which it could well deal, and that a little later the desirability of extending or changing its scope along the lines suggested by Father Schwitalla might be considered and recommendations made to the groups represented on the Committee. He said that it might be desirable to have a number of organizations sitting around one table considering the problems of American medicine, as had been the case during the existence of the Committee on Postwar Medical Service.

Colonel Wergeland discussed the Army's refresher program for returning veterans, stating that authority has now been received from the War Department providing for three months refresher courses, which will take some of the load off veterans' hospitals. He pointed out that medical officers cannot be recalled from terminal leave for this purpose. They may now sign up for three months work in any hospital.

Time and Place of Next Meeting.—It was decided to hold the next meeting of the Committee at American Medical Association Headquarters, Chicago, March 9, 1946.

Medical Legislation

MEDICAL BILLS IN CONGRESS

National Mental Health Act

H. R. 4512 passed the House, March 15, proposing to amend the Public Health Service Act to provide for research relating to psychiatric disorders and to aid in the development of more effective methods of prevention, diagnosis and treatment of such disorders. This bill would make available to the Public Health Service annually the sum of $10,000,000 to carry out its purposes and an additional appropriation of $4,500,000 to construct a National Institute of Mental Health in or near the District of Columbia.

Hill-Burton Hospital Construction Bill

The Public Health Subcommittee of the House Committee on Interstate and Foreign Commerce has concluded hearings on S. 191, the Hill-Burton hospital construction bill. Representatives of the Association appeared before the subcommittee on March 8 in support of the general objectives of the bill. Congressman Priest, chairman of the subcommittee, has indicated that committee action on the bill will be expedited as much as possible.

Army Chiropody Corps

Congressman Traynor, Delaware, has introduced H. R. 5761, a bill to establish a Chiropody Corps in the Medical Department of the Army, to consist of sixty commissioned officers in grades from colonel to second lieutenant inclusive. The bill is pending in the House Committee on Military Affairs, of which Congressman May, Kentucky, is chairman.

Veterans Administration

H. R. 5638, introduced by Representative Havenner, California, proposes to authorize an appropriation of $900,000 to construct a 150 bed patient capacity addition to the existing Veterans Administration facility, Fort Miley, California, for the treatment of general medical and surgical disabilities.

H. R. 5574 has been favorably reported by the House Committee on World War Veterans' Legislation, proposing to increase from $500,000 to $1,500,000 the revolving fund available for loans to disabled veterans pursuing vocational rehabilitation.

STATE LEGISLATION

California

Bill Enacted.—A. 61-X has become chapter 87 of the Laws of 1946. It provides an appropriation of $4,000,000 to the regents of the University of California for the purpose of additional construction, improvements and equipment for the Medical Center of the University of California at San Francisco.

Kentucky

Bills Introduced.—H. 300, to amend the law relating to pharmacies and drugs, proposes to make it unlawful to sell at retail any drug which contains any quantity of aminopyrine, barbituric acid, cinchophen, dinitrophenol, pituitary, sulfanilamide, thallium acetate, thyroid, or their derivatives, or a drug or device the label of which bears a statement that it is to be dispensed or sold only by or on the prescription of a physician, dentist or veterinarian, unless such drug is sold on a written prescription signed by a member of the medical, dental or veterinary profession who is licensed by law to administer such drug or device, and its label bears the name and place of business of the seller, the serial number and date of such prescription, and the name of such member of the medical, dental or veterinary profession. S. 251, relating to licenses to practice certain professions, proposes that any person serving in the armed forces who, at the time of entering such service, was licensed to practice a profession in any other state by the proper authority of such state and who, at the time of entering the service, would have been entitled to receive without examination a license to practice such profession in Kentucky under any statute of Kentucky authorizing the issuance of reciprocal licenses, shall, on making application within one year after being separated from the service, be entitled to receive without an

examination a license to practice such profession in Kentucky, notwithstanding that since the time of entering such service the state in which he was licensed to practice has ceased to issue licenses to practice such profession on a reciprocal basis. S. 252, relating to medical scholarships, proposes to authorize the state board of health to establish annual medical scholarships of the annual value of $800 each. The proposal would require an applicant to sign a written contract under the terms of which he agrees to pursue the medical course of an accredited medical college located within Kentucky until his graduation and to complete a term of not exceeding two years as an intern at some approved hospital to engage continuously in the general practice of medicine in a rural community in Kentucky selected by the state board of health for a period of years equal in number to the years that he shall be a beneficiary of such scholarship.

Bills Passed.—H. 171 passed the house March 6. It proposes the enactment of a law authorizing the establishment, maintenance and operation of medical service plan corporations. "Medical services" would mean the "general and usual services rendered and care administered by doctors of medicine." "Participating physician" would mean a "doctor of medicine licensed to practice medicine and surgery in this state under the provisions of the medical practice act" who agrees in writing to perform the services specified by the subscription certificates. S. 87 passed the senate March 14. It proposes that no person after July 1, 1946 shall maintain a hospital in the state without first obtaining a license therefor. The word hospital is defined as "any institution which maintains and operates organized facilities for the diagnosis, treatment and care of human beings suffering from illness, injury or deformity, where bedside nursing care is rendered for a period exceeding twenty-four hours, to care for 10 patients or more." S. 109 passed the house March 12. To amend the law relating to the practice of chiropractic, it increases the required period of academic training and adds philosophy to the list of subjects which must be studied.

Bills Enacted.—H. 257 was approved March 6, 1946. To amend the law relating to divorce, it authorizes the granting of a divorce when one spouse has become permanently and incurably insane and has been confined in an asylum for at least five years prior to filing the suit. In such action the court shall find from the testimony of two or more physicians competent in psychiatry that such insanity is permanently incurable.

Massachusetts

Bills Introduced.—S. 426 proposes to authorize the department of public health to construct an 800 bed hospital for the care of persons suffering from chronic diseases. S. 427 proposes to authorize the department of public health to continue its program for the production and utilization of blood plasma and other products derived from blood.

Bill Passed.—H. 74 passed the senate March 12. To amend the law relating to bacteriologic laboratories, it proposes to authorize the department of public health to grant certificates of approval for laboratory tests on milk, foods, eating utensils, water and sewage in accordance with such rules and regulations as the department may establish.

Mississippi

Bill Introduced.—H. 745, to amend the law relating to divorce, proposes to authorize the granting of a divorce on the grounds of insanity after a thorough examination of such insane person by three physicians who are recognized authorities on mental diseases and who agree that such insane person is incurable.

Bills Passed.—H. 782 passed the house March 13. It proposes that any person who has been in any branch of the armed forces of the United States, who has a license to practice any profession in Mississippi and who is required by law to pay dues to any licensing board or association shall be exempt from the payment of such dues for the time while he is in the service of his country and shall be reinstated as a member in good standing without payment of any back dues. S. 155 passed the senate March 12. To amend the law relating to the licensing of nurses, it proposes certain standards which a hospital must maintain in order to be recognized and approved as a training school for nurses.

Missouri

Bill Introduced.—S. 456 proposes the creation of a division of the state department of education to be known as the division of registration and examination and assigns as boards of said division the state board of medical examiners, state board of osteopathic registration and examination, state board of chiropractic examiners and others.

Bills Passed.—S. 359 passed the senate March 5. It proposes the establishment within the department of education of a division of registration and examination to coordinate the work of existing boards of registration and examination, including the state board of medical examiners, the state board of chiropractic examiners and the state board of osteopathic registration and examination. S. 424 passed the senate March 12. It proposes to transfer to the state board of medical examiners certain powers and duties heretofore vested in the state board of health. S. 435 passed the senate March 5. It proposes to transfer to the executive secretary of the division of registration and examination of the state department of education certain powers heretofore vested in the state board of chiropractic.

New Jersey

Bill Introduced.—A. 418, to amend the workmen's compensation act, proposes to provide proper workmen's compensation in cases of hernia.

Bills Passed.—A. 69 passed the senate March 11. It proposes to authorize the establishment and maintenance of blood banks to collect, process, store and distribute human blood and the various human blood derivatives, including special therapeutic and diagnostic serums which are deemed of value in the treatment of sick and injured persons, and the prevention of certain diseases. A. 147 passed the assembly March 12. It proposes that the holder of a license to practice a profession the license or registration certificate of which was forfeited or lapsed because of the passage of time while the holder thereof was in the armed forces shall be entitled, without examination or reexamination, within six months after his discharge, to a renewal or reinstatement of such license on payment of the lawful fee.

New York

Bills Introduced.—A. 2087 is similar to S. 1572 previously reported. It proposes the creation of a board of massage examiners and defines massage as "treating the human body for hygienic or remedial purposes by stroking, kneading, tapping or rolling with the hands or with other instrumentalities for the purpose of relieving, alleviating or reducing affected parts thereof but shall not include reduction of a fracture or dislocation of a bone." A. 2104 proposes the creation of a state board of chiropractic examiners and defines the practice of chiropractic as "the science of locating and the removing of nerve interference in the human body, according to chiropractic principles, where such interference is indicated; or misalinement; or subluxations of the vertebral column appear. It excludes operative surgery, the reduction of fractures, the prescription or use of drugs or medicine, and the practice of obstetrics." A. 2121 is similar to S. 1626, previously reported. It proposes the creation of a board of nutrition control at least one member of which shall be a licensed doctor of medicine, to adopt and specify standards of quantity, quality and character of food to be fed to all wards, inmates and patients in all institutions of the state except those in the department of education. A. 2165 is similar to S. 1797, previously reported. It proposes that physician members of the industrial council shall not be eligible for authorization to render medical care under this chapter and shall not examine, treat, consult or in any other way care for a compensation claimant at the request either of such claimant or of a carrier. A. 2206 is similar to S. 1904, previously reported. It proposes the creation of a temporary state commission to make an intensive study and survey of social, educational and physical problems of individuals afflicted with cerebral

palsy with the view and for the purpose of devising and recommending a program for the aid, care, treatment and rehabilitation of such persons. The proposal would require at least two members of the commission to be physicians or neurologists of conceded eminence, with especial knowledge of the causes and effects of cerebral palsy and the treatment and care of persons suffering therefrom. A. 2366, to amend the public health law, proposes to make it the duty of every householder, before employing any person for domestic service in his household, to require from such person the production and surrender of a certificate of good health from a duly licensed and registered physician, issued not more than thirty days prior to the date of application or commencement of such employment, certifying that such person is free from tuberculosis, any venereal disease in its communicable or infectious stage or any other infectious, contagious or communicable disease. The employee would be required to be reexamined each six months. A. 2377 proposes to authorize corporations organized under the consumers' cooperative stock corporation law for the purpose of furnishing medical expense indemnity service to persons who become subscribers under contracts with such corporations to reincorporate under the membership corporations law. A. 2395, relating to the creation of a nutrition council, proposes the creation of a state nutrition council to coordinate all of the state's nutritional activities, conduct research or allocate a portion of its funds for research in nutrition; recommend reorganization of the state's nutritional activities; launch a widescale advertising, publicity and promotional campaign of instruction of the elements constituting a sound diet and the proper use of such farm products as may become surplus from time to time; and to do such other things as the council may deem essential for improving the nutritional status of the people. S. 1857 is similar to A. 2140, previously reported. It proposes to authorize qualified dentists or qualified dental assistants to use general anesthetics in the care and treatment of dental patients but would require such persons to have at their disposal at the time of administering any general anesthesia the necessary drugs, medicines and equipment for resuscitation as the board of dental examiners shall prescribe. The qualified dentist or dental assistant is defined as one who has passed an approved course of training or who has approved experience in the administering of anesthetics. S. 1955 is similar to A. 2157, previously reported. To amend the workmen's compensation law, it proposes that medical services shall include roentgenology, physical therapy, pathology and anesthesiology. S. 2038, to amend the labor law, proposes the enactment of a disability benefit law. S. 2218 proposes an appropriation for the use of the memorial cancer center fund for cancer research and for the treatment, prevention and cure of cancer and allied diseases. S. 2238, to amend the insurance law, proposes to remove therefrom the general prohibition against authorizing foreign or alien medical expense indemnity or hospital service corporations from doing business in the state. S. 2260 proposes the creation of a temporary state commission to make a study and survey of the prevalence and facilities for the treatment of cancer cases within the state. S. 2292, to amend the education law, proposes a new section dealing with license by endorsement. The proposal would authorize the endorsement of the diploma and license of a physician from another state, and the issuance of a reciprocal license to practice medicine and surgery in New York to such physician, if he shows that he is a citizen of the United States, is not less than 35 years of age, has a degree of doctor of medicine from a class A school in the United States, Canada or foreign medical school, has secured a license to practice medicine and surgery from any state in the United States after written examination, has honorably served not less than three years as a permanently or temporarily commissioned officer in the medical corps of the United States Army or Navy during World War I or II and has obtained both the diploma and license to be endorsed at least one year prior to entry into the armed forces as a permanently or temporarily commissioned medical officer.

Bills Passed.—A. 1249 passed the assembly March 11 and the senate March 13. To amend the law relating to the practice of osteopathy, it proposes that persons holding a license to practice osteopathy who have been granted the additional rights provided for under existing statutes and persons who shall meet all the preliminary and professional requirements required as of Sept. 1, 1936 and have satisfactorily passed or shall satisfactorily pass the regular medical licensing examination shall be granted the right to practice medicine without limitation as defined by the statutes of the state of New York. S. 556 passed the assembly March 12. To amend the law in relation to hospital liens, it proposes that such liens shall not include personal services rendered by a physician or surgeon and that the rates charged by the hospital shall be deemed equivalent to the scheduled rates currently approved by the industrial commissioner and the superintendent of insurance for cases under the workmen's compensation law. S. 1000 passed the senate March 11. To amend the law relating to privileged communications, it proposes the waiver of such privilege by any party in interest in any litigation wherein the interests of the personal representative of the deceased patient are deemed by the trial judge to be adverse to those of the estate.

Rhode Island

Bills Introduced.—H. 771 proposes an appropriation to the state department of health to carry on an experimental dental research study in administrative practice in conjunction with the United States Public Health Service. H. 789 proposes to authorize any person arrested by the police of any city or town in the state or by a member of the state police to have the right immediately after his arrest to use a telephone in order to get in touch with his physician, his attorney or a member of his family. H. 828 proposes that no person, firm or corporation shall dispense benzedrine except on receipt of an original nonrefillable prescription therefor. S. 141 proposes to authorize the governor to appoint a special blood plasma bank commission to study the feasibility of establishing blood plasma banks in the several counties of the state, free for all who need it in the judgment of their doctors.

Virginia

Bills Passed.—H. 257 passed the senate March 9. It proposes that any person who has tuberculosis in a communicable form who, having been instructed in writing by the local board of health, department of health or health officer or superintendent of any sanatorium of the state to take precautions to protect the members of his household and the public from being infected by tuberculosis communicated by such person, wilfully refuses to follow such instructions shall be guilty of a misdemeanor. H. 378 passed the senate March 6. It proposes regulations for the creation of local hospital or health center commissions. S. 21 passed the house March 9. It proposes that the state board of health be authorized to initiate and administer a program of hospital treatment and care for indigent persons residing in the state. S. 237 passed the house March 7. It proposes the creation of an examining board for the certification of clinical psychologists.

Bills Enacted.—S. J. R. 20 was adopted March 6. It provides for the creation of a commission to make a thorough and complete study of problems related to hospital and medical care, including the need of hospitals and health centers in the state, adequate plans for the prepayment of hospital and medical care for all classes of citizens, with due emphasis on the special needs of rural people, and other items related to the health and medical care of the citizens of the state. S. 166 has become chapter 119 of the Laws of 1946. It amends the law relating to hypnotic drugs by redefining the words "dangerous drugs" so as to include, in addition to preparations already so included, "Hormones, or hormone drug preparations, whether of natural origin, prepared from the so-called glands of internal secretion or endocrine glands, or whether synthetically produced, by whatsoever trade name or designation, or any compound or mixture thereof; except preparations intended for external use containing hormones in combination with other ingredients unfit for internal administration." Under this law no person will be able to sell or give away any such drug except on the prescription of a doctor of medicine, doctor of osteopathy, doctor of dental surgery or doctor of veterinary surgery, lawfully practicing his profession, and prescriptions for hormones can be refilled only the number of times specified on the face of the prescription by the prescriber.

Washington Letter

(From a Special Correspondent)

March 18, 1946.

Delay of Truman Health and Medical Care Program

Congress has not yet acted finally on President Truman's proposed health and medical care program and many other projects which he stated were must legislation. Most of his legislative recommendations, some almost a year old, are in the Congressional mill, but few have emerged as law. His request for fair employment practices legislation was shelved, his labor and employment bills were scaled down. The only administration items to go through pretty much as asked were surplus disposal measures. Hearings have been under way on extension of price control and war powers and the British loan. Still awaiting final action are the health and medical care program, extension of the Selective Service act beyond May 15, the increased legal minimum wage, a comprehensive program for scientific research, the universal training program, the Presidential succession, the use and control of atomic energy, strategic materials stockpiling and social security coverage for veterans during military service.

Negro Doctors to Serve in Veterans' Hospitals

Dr. Paul R. Hawley, Veterans Administration medical director, reports that the way has been cleared for appointment of Negro doctors in veterans' hospitals, with local custom to be the ruling factor in appointments. He is considering plans to set up all Negro units in a number of hospitals with Negro patients to be attended by Negro doctors and nurses. Dr. Hawley reports that 152 full time resident physicians are now on duty in eight veterans' hospitals. The House Military Affairs Committee has voted favorably on a bill to permit retired officers to work as physicians, executives and hospital managers for the Veterans Administration without affecting their retired status.

President Given Control of Atom by Senate Group

The Senate Atom Energy Committee has voted to give the President direct control over production of atom bombs and other military applications of nuclear energy. Under the pending control bill a five man civilian commission would be authorized to produce atom weapons on "express consent and direction of the President." Mr. Truman told a recent press conference that he was determined that atomic energy control should remain in civilian hands. He denied that military control of nuclear development was needed for national defense, declaring that as Commander in Chief he was charged with responsibility for the security of the nation.

Senate Action Expected on Mental Health Bill

Senator Claud Pepper, Democrat of Florida, expects early Senate action on the bill to establish a mental health institute in Washington, which was approved by the House by a standing vote of 74 to 10. Sponsored by Representative Priest, Democrat of Tennessee, who was supported by Representative Brown, Republican of Ohio, in piloting the bill through the House, the bill would appropriate $4,500,000 for a psychiatric research institute at Bethesda and would authorize $10,000,000 annually for research seeking cures for mental disorders.

Nurses' Memorials Wanted Outside Washington

In addition to the $2,000,000 home for nurses planned for Washington as a national memorial to their work in the war, memorials in other cities have been requested. Arthur H. Johnson, chairman of a committee planning to raise funds for the Washington memorial, said that dwelling places for nurses are desired in other sections of the country. "Once the main objective, a social center and dwelling place for war nurses in the nation's capital, is reached, we will decide on location of other centers."

Amputees Ask Government to Supply Automobiles

Three hundred war amputees met at Forest Glen Hospital to endorse a letter to President Truman asking that the government provide them each with a car in an attempt to remove their handicap in industrial competition.

Official Notes

PIONEER TELEVISION PROGRAMS BY A. M. A.

The Bureau of Health Education announces a series of experimental telecasts over television station W9XBK, Chicago, beginning April 2 and running for twenty-six weeks.

The following subjects will be shown:

April 2.—Evolution of the stethoscope. Dr. Edwin P. Jordan.
April 11.—Medical uses of the x-rays. Mr. H. A. Carter.
April 25.—The basal metabolic rate. Dr. William W. Bolton.
May 9.—Blood examinations. Dr. J. J. Moore.
May 23.—Blood pressure demonstration. Dr. William W. Bolton.
June 6.—Contagious disease precautions in the home. Dr. W. W. Bauer.
June 20.—Methods of administering drugs. Dr. Austin E. Smith.

The programs are being telecast on a sustaining basis; that is, the station will derive no revenue. Credit will be given on the program to Chicago medical supply firms which lend apparatus for demonstration, but there will be no other advertising. Scripts will be prepared in cooperation with each medical demonstrator and coordinated by the Bureau of Health Education. Dr. W. W. Bauer will summarize the odd numbered programs and Dr. William W. Bolton the even numbered programs.

Coming Medical Meetings

Aero Medical Association, Chicago, April 7-9. Dr. David S. Brachman, 1016 Dime Building, Detroit 26, Secretary.
Alabama, Medical Association of the State of, Birmingham, April 16-18. Dr. Douglas L. Cannon, 519 Dexter Ave., Montgomery 4, Secretary.
American Association of Anatomists, Cleveland, April 4-6. Dr. Eliot R. Clark, University of Pennsylvania School of Medicine, Philadelphia 4, Secretary.
American College of Physicians, Philadelphia, May 13-17. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.
American Pediatric Society, Skytop, Pa., May 1-3. Dr. Hugh McCulloch, 325 N. Euclid Ave., St. Louis 8, Secretary.
American Society for Research in Psychosomatic Problems, New York, May 11-12. Dr. Edwin G. Zabriskie, 714 Madison Ave., New York 21, Secretary.
American Surgical Association, Hot Springs, Va., April 2-4. Dr. Warfield M. Firor, Johns Hopkins Hospital, Baltimore 5, Secretary.
Arizona State Medical Association, Phoenix, May 2-3. Dr. Frank J. Milloy, 112 N. Central Ave., Phoenix, Secretary.
Arkansas Medical Society, Little Rock, April 14-15. Dr. W. R. Brooksher, 602 Garrison Ave., Fort Smith, Secretary.
California Medical Association, Los Angeles, May 7-10. Dr. George H. Kress, 450 Sutter St., San Francisco 8, Secretary.
Central States Dermatological Society, Detroit, April 27. Dr. Clarence E. Reyner, Henry Ford Hospital, Detroit, Secretary.
Connecticut State Medical Society, Hartford, May 1-3. Dr. Creighton Barker, 258 Church St., New Haven 10, Secretary.
Florida Medical Association, Jacksonville, April 22-24. Dr. Robert B. McIver, P. O. Box 1018, Jacksonville, Secretary.
Georgia, Medical Association of, Macon, May 7-10. Dr. Edgar D. Shanks, 478 Peachtree St., N.E., Atlanta, Secretary.
Illinois State Medical Society, Chicago, May 14-16. Dr. Harold M. Camp, 224 S. Main St., Monmouth, Secretary.
Iowa State Medical Society, Des Moines, April 17-19. Dr. John C. Parsons, 406 Sixth Ave., Des Moines 9, Secretary.
Kansas Medical Society, Wichita, April 22-25. Dr. F. R. Croson, 112 W. Sixth St., Topeka, Secretary.
Louisiana State Medical Society, Alexandria, May 6-8. Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans 13, Secretary.
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 23-24. Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore 29, Secretary.
Mississippi State Medical Association, Jackson, May 14-15. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.
Missouri State Medical Association, St. Louis, March 24-26. Dr. Ralph L. Thompson, 634 N. Grand Blvd., St. Louis 3, Secretary.
Nebraska State Medical Association, Lincoln, May 6-9. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln 8, Secretary.
New Hampshire Medical Society, Manchester, May 14. Dr. C. R. Metcalf, 5 S. State St., Concord, Secretary.
New Orleans Graduate Medical Assembly, New Orleans, April 14. Dr. Joseph S. D'Antoni, 1430 Tulane Ave., New Orleans 13, Secretary.
New York, Medical Society of the State of, New York, April 29-May 3. Dr. Walter P. Anderton, 292 Madison Ave., New York 17, Secretary.
North Carolina, Medical Society of the State of, Pinehurst, May 1-3. Dr. Roscoe D. McMillan, P. O. Box 232, Red Springs, Secretary.
Northern Tri-State Medical Association, South Bend, Ind., April 9. Dr. John L. Stifel, 232 Michigan St., Toledo 2, Secretary.
Ohio State Medical Association, Columbus, May 7-9. Mr. Charles S. Nelson, 79 E. State St., Columbus, Executive Secretary.
Postgraduate Institute of the Philadelphia County Medical Society, Philadelphia, April 9-12. Dr. George P. Muller, 301 S. 21st St., Philadelphia, Director.
Rhode Island Medical Society, Providence, May 15-16. Dr. William P. Buffum, 122 Waterman St., Providence 6, Secretary.
South Carolina Medical Association, Greenville, April 30-May 2. Dr. Julian P. Price, 105 W. Cheves St., Florence, Secretary.
Tennessee State Medical Association, Knoxville, April 9-11. Dr. W. M. Hardy, 706 Church Street, Nashville, Secretary.
Texas, State Medical Association of, Galveston, May 6-9. Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth 3, Secretary.
West Virginia Medical Association, Huntington, May 13-15. Mr. Charles Lively, P. O. Box 1031, Charleston 24, Executive Secretary.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Personal.—Dr. Claude F. Dixon, Rochester, Minn., was made an honorary member of the Los Angeles Surgical Society, February 8, at which time he discussed "Anterior Resection for Carcinoma of the Lower Sigmoid."

Diamond Jubilee.—On January 31 the Los Angeles County Medical Association held a dinner commemorating its seventy-fifth anniversary. As a feature of the occasion the bulletin of the society, January 31, was devoted to a complete review of the society's history, beginning with the meeting in 1871 of seven physicians in the office of Drs. John S. Griffin and Joseph P. Widney to organize the society. The preliminary meeting had been held on January 25. Dr. Widney is credited with being the founder of the School of Medicine of the University of Southern California, Los Angeles, of which he was first dean. The Diamond Jubilee issue of the bulletin contains interesting illustrations and discussions of the development of medicine in Los Angeles County.

COLORADO

Dr. Macomber Returns as Editor.—Dr. Douglas W. Macomber, Denver, has returned as editor of the Colorado State Medical Society. Dr. Lyman W. Mason, Denver, has been acting scientific editor while Dr. Macomber was serving in the army. Mr. Harvey T. Sethman has returned to his activities in the Colorado State Medical Society as executive secretary and managing editor of the *Rocky Mountain Medical Journal* (THE JOURNAL, Dec. 22, 1945, p. 1215).

CONNECTICUT

Conference on Pulmonary Diseases.—The Connecticut State Medical Society and the Veterans Administration are cooperating in the series of conferences the second of which was on pulmonary diseases, February 28. The speakers were:

Dr. James J. Hennessy, Hartford, Trends in Diagnosis and Treatment of Pulmonary Disease.
Dr. Joseph E. Dushane, Hartford, Pulmonary Disease in the Military Service.
Dr. Gustaf E. Lindskog, New Haven, Certain Aspects of Diagnosis and Treatment of Pulmonary Suppuration.
Capt. Morris Dressler, Newington, Pulmonary Disease with Relation to Heart Disease.
Dr. Joseph N. D'Esopo, New Haven, Thoracic Wounds in Battle Casualties.

Hospital Advisory Committee.—In anticipation of the passage of the Hill-Burton bill or similar federal legislation providing for studies of hospital and health center facilities in the states and grants to extend such facilities, Governor Raymond E. Baldwin has designated the state department of health as the official agency to act in this connection and named an advisory committee to the department to make the required studies. The committee, of which Dr. James R. Miller, Hartford, is chairman, is composed of twenty-six members representing health, hospital and nursing agencies, the state dental association and the Travelers Insurance Company. The committee held an organization meeting in Hartford on January 31.

Executive Director Named to Care for Inebriates.—With the appointment of Dudley P. Miller, Ph.D., as executive director of the Connecticut State Fund for Inebriates, a statewide system of free care for alcoholic addicts was launched January 25. Dr. Miller has been assistant director of New Haven Hospital and took over his new position March 15. The program will be financed by the fund to which will revert 9 per cent of all income from liquor license permits (THE JOURNAL, Dec. 1, 1945, p. 970). A board of trustees has been named for the fund, two physician members being Dr. Thomas P. Murdock, Meriden, formerly president of the Connecticut State Medical Society, and Dr. Arthur H. Jackson, Waterbury. Selden D. Bacon, Ph.D., of the department of sociology and the School of Alcohol Studies, Yale University, is chairman of the board. The program is said to be the first of its kind in the United States. It is planned to establish clinics in the major population areas and a number of convalescent centers for treatment of those who cannot be treated at home. The plans also call for a commitment center "to which courts and other constituted authorities may send for a period up to three years those inebriates for whom there is little or no hope of rehabilitation and who might otherwise be a liability and a danger to their communities." In a statement to the press, Dr. Bacon said the board would cooperate with the programs of Alcoholics Anonymous and the Yale school.

DISTRICT OF COLUMBIA

Group to Implement Compulsory Health Insurance.—*Medical Annals* reports that a group of physicians and laymen met at Pierce Hall January 26 "to set up a civic organization in Washington to carry on educational work for a national health program and to take any active legislative steps necessary to help implement that program, especially for compulsory health insurance." The group is further committed to support President Truman's national health program. Dr. Anna Tulman-Rand, chairman of the district chapter of the Physicians' Forum, called the conference and was elected chairman of the steering committee. Others who will serve on the committee are Dr. Irving W. Winik, Dr. Dorothy Boulding-Ferebee, Miss Margaret Stein, medical economist, Benjamin Asia of the district chapter of the National Lawyers' Guild and Rev. Francis W. McPeek of the Washington Federation of Churches.

ILLINOIS

Selective Service Personnel Honored.—The Congressional Medal of Merit was presented to 2,226 Cook County and Chicago members of the Illinois Selective Service system by Governor Dwight H. Green, January 23, at the Auditorium Theater, Chicago. The medal, authorized by Congress last July, was presented to local board members, appeal board members, government appeal agents, reemployment committeemen, physicians and dentists who have served the Selective Service System faithfully for a period of two or more years as of Nov. 30, 1945. In the case of a deceased member the medal was presented to a designated member of his family. Eligible members now serving in the military forces will receive their awards on release from service. Suitable ceremonies were held throughout the nation to honor Selective Service personnel in their respective states. In Illinois alone the honor group included at the time of this report 1,411 local board examining physicians, 388 physicians who were members of medical advisory boards, 18 physicians who were members of boards of appeal and 18 physicians who were members of local boards; 837 additional physicians who entered the armed forces while serving with the Illinois Selective Service System will receive the medal when they return to civilian life. Another group of 849 physicians have served or are serving the system but will not receive the medal by reason of their having resigned prior to the expiration of two years' service or by reason of having served less than two years.

Chicago

Solomon Memorial Foundation.—Dr. Joseph L. Wilkey was recently elected president of the Dr. Jerome D. Solomon Memorial Research Foundation, an affiliate of the Hektoen Institute of Medical Research, 629 South Wood Street, Chicago 12 (THE JOURNAL, Nov. 10, 1945, p. 756). The foundation research is sponsored by a medical advisory board consisting of Drs. Morris Fishbein, chairman, Ludvig Hektoen, Samuel J. Hoffman, Andrew C. Ivy, Raymond W. McNealy and Karl A. Meyer.

Loyola Will Not Close.—The current rumors that Loyola University School of Medicine intended to close are ended with announcement that the university is in the midst of discussions with the Medical Center Commission concerning space and position for the future Loyola medical school building. The medical school has been an integral part of Loyola University since 1915, when it came into being with the acquisition of Bennett Medical College, established in 1868, and the Chicago College of Medicine and Surgery. The medical school, which is approved by the Council on Medical Education and Hospitals of the American Medical Association, is located at 706 South Wolcott Avenue, the heart of the projected medical center area.

School for Handicapped Established.—The old North Chicago Hospital, 2551 North Clark Street, has been leased to house what will be known as the Illinois Children's Hospital School, a school for the handicapped, which was set up in recent legislation with an appropriation of $420,000 for the biennium ending June 30, 1947. Richard Eddy was appointed superintendent of the new project by Governor Dwight H. Green last October when he resigned as head of the Illinois State Training School for Boys, St. Charles. A medical program will be under the direction of Dr. Gerda B. Irving. Educational activities for children, who will range in age from 5 to 13 years, will be in charge of Miss Ruth A. Ryder, formerly educational and recreational supervisor in government hospitals in the Pacific War Theater. Miss Virginia Cornwell of Billings

Memorial Hospital was appointed director of occupational therapy. It is planned to open the school April 15 on an experimental basis, serving approximately 100 children of elementary age, to be taken from among those who are permanently handicapped, too crippled to attend regular school or who for various social reasons cannot study at home. The plan was evolved after a survey by the Illinois Commission for Handicapped Children, newspapers reported.

KENTUCKY

Personal.—Dr. Thomas P. Leonard has been named health officer of the city of Frankfort, a position he held prior to entering military service.——Dr. Philip H. Dorger was guest of honor at a dinner December 16 given in observance of his completion of twenty-five years as a member of the staff of the St. Elizabeth Hospital, Covington.

Girl Awarded First Scholarship Under New Fund.—Miss Juanita Phillips, Stearns High School teacher, is the first applicant to be accepted for a scholarship under the Kentucky Medical Scholarship Fund, newspapers report. Miss Phillips will receive a four year scholarship to the University of Louisville School of Medicine. The scholarship carries a loan of about $3,500 from the Kentucky Medical Scholarship Fund, set up by the Kentucky State Medical Association to provide medical facilities to make rural counties more attractive for practicing physicians and to enable students to complete their training. Miss Phillips, in accordance with the agreement, will, on receiving her M.D. degree and concluding her internship, return to McCreary County for four years for the practice of medicine. The scholarship fund was described in THE JOURNAL, January 19, page 162. The state legislature has been asked to set aside a revolving fund of $75,000 to help maintain the project.

LOUISIANA

Dr. Lapham Returns as Dean.—On January 1 Dr. Maxwell E. Lapham returned to his position as dean of Tulane University of Louisiana School of Medicine, New Orleans. Dr. Lapham had been in service with the navy.

Rudolph Matas Honored.—A gold plaque was presented to Dr. Rudolph Matas recently in honor of his completion of fifty years as a member of the staff of the Touro Infirmary, New Orleans. Dr. Matas, who is 85 years of age, graduated at Tulane University of Louisiana School of Medicine, New Orleans, in 1880.

Research Fund in Dermatology.— The Tulane University of Louisiana Medical School, New Orleans, has been left $100,000 by the late Dr. Henry E. Menage. The fund will be called the Henry E. and Henrietta Menage Research Fund in Dermatology and will be used for medical research on the causes, prevention and cure of diseases of the skin. Dr. Menage graduated at Tulane in 1892, receiving degrees in pharmacy and medicine. He joined the faculty in 1907 and later was made professor of dermatology. He was emeritus professor when he died in 1940.

MARYLAND

Alfred Blalock Declines Columbia Position.—Dr. Alfred Blalock, professor and head of the department of surgery, Johns Hopkins University School of Medicine, Baltimore, recently announced that he had declined an invitation to accept a similar position at Columbia University College of Physicians and Surgeons, and the Presbyterian Hospital, New York, it is reported.

MASSACHUSETTS

Tufts Alumni Meeting.—The annual dinner meeting of the Tufts Medical Alumni Association will be held at the Somerset Hotel, Boston, April 10, with Major Norman T. Kirk, Surgeon General of the Army, as guest speaker on "American Medicine in World War II." A message will be read from President Harry S. Truman. Other speakers will be Drs. Alonzo K. Paine, Reginald Fitz, Louis E. Phaneuf, Albert Warren Stearns, Dwight O'Hara, Benjamin Sachs, William E. Browne and Leonard Carmichael, LL.D., all of Boston. This year marks the fiftieth anniversary of the graduation in 1896 of the first class to complete the full program of studies as students of the Tufts College Medical School, Boston. A feature of the meeting will be the presentation to the medical school of a portrait of the seven founders of the medical school. The portrait is new and is a gift of the class of 1920. The subjects of the portrait are:

Dr. John W. Johnson, professor of obstetrics and gynecology.
Dr. Albert Nott, professor of physiology and dean.
Dr. Charles P. Thayer, professor of anatomy and secretary.
Dr. William R. Chipman, professor of surgery.
Dr. Henry W. Dudley, professor of pathology.
Dr. Frank G. Wheatley, professor of materia medica and therapeutics.
Dr. Walter L. Hall, professor of medicine.

MICHIGAN

Inter-Professional Council.—Mr. William A. Freimuth of the Detroit Bar Association has been elected president of the newly organized Inter-Professional Council. The council was formed to develop a closer relationship between the professions and professional groups and to encourage friendly and constructive discussions between professions for mutual help and public service. Other officers are Dr. Willard D. Mayer, Wayne County Medical Society, vice president; Irett Ferris, Detroit Teachers Association, secretary, and Floyd Straith, Detroit District Dental Society, treasurer. Cooperating societies forming the membership of the new Inter-Professional Council include the Detroit Chapter of American Institute of Architects, Detroit Teachers Association, Detroit District Dental Society, Wayne County Medical Society, Michigan Association of Certified Public Accountants and the Engineering Society of Detroit.

Fund for Crippling Diseases.—On February 15 the council of the Wayne County Medical Society approved the program of the Fund for Crippling Diseases, a nonprofit organization devoted primarily to the study of rheumatic and allied diseases. The program is divided into three distinct sections: to raise funds by personal solicitation, to create an advisory research committee and to select and finance research projects. These three sections constitute the program to which this organization will devote its energies and funds. No further expansion of activities will be undertaken until such a time as the need for new activities is actually present and they are recommended by the local medical society and the American Rheumatism Association. All the solicitation for the raising of funds will be conducted by the present officers and trustees of the Fund for Crippling Diseases by personal contact. No solicitors will be employed and no fees or commissions will be paid. The advisory committee will be composed of nine members. At least six of the members will be medical doctors; the remainder will be Ph.D.s active in medical work. The board of trustees will dispense funds accumulated through solicitation, by gift or by grant to the projects recommended by the advisory committee in the amount and manner best suited to accomplish the results desired. All projects will be confined to local accredited schools and hospitals selected by the advisory committee. The new fund is a project developed from the proposed program of the Earl A. Peterman Foundation. In response to the request of Dr. Peterman, Detroit, for the society's approval, a special committee was appointed to study the plans. Since then the Earl A. Peterman Foundation has been incorporated under the name of the Fund for Crippling Diseases. Offices of the Fund for Crippling Diseases are Medical Director, 7600 John R Street, Detroit, and Research Division, General Offices, 19 Owen Avenue, Detroit. Dr. Earl A. Peterman is chairman of the board of trustees, Roy D. Potter, treasurer, and Joseph H. Conn is secretary. Plans call for a board of twelve trustees. Therefore nine more trustees will be elected to the board for three year terms; that is, three for one year, three for two years and three for three years and three year terms thereafter. The fund employs N. Chester Clark, 19 Owen Avenue, as full time business manager. The Earl A. Peterman Foundation identity is not being retained. The research advisory committee has not been formed as yet.

NEW YORK

Regional Hospital Council Formed.—The Council of Rochester Regional Hospitals has been established in a five year agreement with the Commonwealth Fund. Said to be the first of its kind in the country, the unit was established as an experimental plan to give rural hospitals the advantages of contact with the city medical center and opportunity to keep abreast of technics in use in city hospitals. Terms of a five year contract provide for an annual grant of $275,000 from the Commonwealth Fund, part of which will be used to establish an educational and consultative program for professional hospital personnel and part used for expansion of rural hospitals and purchase of additional hospital equipment if the need becomes apparent. Thomas R. White, president of the Rochester Hospital Council, was named president of the new council at an organization meeting February 26. The meeting climaxed almost a year's experimental program. The Rochester region was chosen by the Commonwealth Fund as the site of the experimental program after a study of a dozen or more areas possessing medical centers, such as that provided by Strong Memorial Hospital and the University of Rochester School of Medicine and Dentistry, it was stated. It is expected that other regional programs will be established on the lines of the one being set up in Rochester if the experiment proves successful. The council will name a director and will establish offices in the Reynolds Arcade Building. It will work in cooperation with the Rochester Hospital Council in developing the expanded program. A per-

manent program of educational activities will be set up by the council, including refresher courses and training in ward management and operating room and delivery room technic for graduate nurses and opportunities for exchange of experiences between hospital technicians, dietitians, medical record libraries and other staff members. A continuous postgraduate educational program for physicians will be organized which will embrace clinical conferences, short refresher courses and one to three year residencies and fellowships. An extensive clinical consultation service will be organized throughout the region. Cooperating hospitals, besides Rochester's six major hospitals and those in Canandaigua and Brockport, are Bath Memorial, Clifton Springs Sanitarium and Clinic, Dansville General, Bethesda and St. James Mercy in Hornell, Geneva General, and Soldiers and Sailors Memorial in Penn Yan.

New York City

Graduate Fortnight.—"Tumors" will be the theme of the nineteenth graduate fortnight of the New York Academy of Medicine, October 7-18.

Center for Persons Over Sixty-Five.—Representatives of social agencies and business groups of the East Side area are cooperating in the establishment of a recreational center for men and women more than 65 years of age. The objective of the center is to meet the problem of the aged by offering them an active environment with no intention of segregation.

Annie Goodrich Honored.—On February 26 a luncheon was held at the Waldorf Astoria Hotel to honor Annie W. Goodrich on her eightieth birthday. Miss Goodrich is credited with establishing the first graduate school of nursing at Yale University, New Haven, serving there as dean for eleven years as well as doing extensive pioneer work in the field of nursing.

The Menas Gregory Lecture.—Brig. Gen. William C. Menninger, director of the neuropsychiatric division of the Office of the Surgeon General, Army Service Forces, will deliver the second annual Menas S. Gregory Memorial Lecture at the New York University College of Medicine, April 26. His subject will be "Lessons from Military Psychiatry for Civilian Psychiatry."

Friday Afternoon Lectures.—The Medical Society of the County of Kings announces the following group of Friday afternoon lectures:

Dr. Irving J. Sands, Brooklyn, The Rehabilitation of the Neuropsychiatric Veterans, March 15.
Dr. Edwin K. Morgan, Brooklyn, Urologic Aids in General Practice, March 22.
Dr. John G. McNamara, Brooklyn, Orthopedics in Children, March 29.
Dr. Howard W. Potter, Brooklyn, Psychosomatic Medicine, April 5.
Dr. Henry W. Louria, Brooklyn, Practical Management of Diseases of the Thyroid Gland, April 12.

Colonel McEwen Returns as Dean.—Col. Currier McEwen, after more than two and a half years of military service, has resumed his duties as dean of the New York University College of Medicine. Granted a leave of absence by the university for military service, he entered active military duty May 6, 1943 and returned with the Bronze Star and the Legion of Merit. Col. McEwen first served as executive officer of the First General Hospital, which was the Bellevue affiliated unit. After training at Fort George G. Meade, Maryland, and Camp Pickett, Va., the unit sailed from Boston, Dec. 29, 1943, and opened as a functioning hospital at North Mymms Park, near London, Jan. 9, 1944, where for the first two months it experienced the Luftwaffe's "baby blitz" against London. In July 1945 Dr. McEwen joined the headquarters of the European Theater of Operations in Paris and Frankfort, Germany, as chief consultant in medicine.

Dr. Bernecker Resigns as Health Commissioner—Israel Weinstein Named.—Dr. Edward M. Bernecker on March 13 resigned as commissioner of health and was immediately reappointed to his former position as commissioner of hospitals. Lieut. Col. Israel Weinstein, newly appointed deputy commissioner of health, was appointed acting commissioner, pending the choice of a successor to Dr. Bernecker. At the same time the mayor accepted the resignation of William F. Jacobs, hospital commissioner, who took over that place on March 4, and approved his restoration to his former position of medical superintendent of Bellevue Hospital. Dr. David R. Rutstein, Albany, deputy commissioner of the New York City Department of Health since March 15, 1943, resigned, effective April 1. Dr. Rutstein has been in charge of social hygiene, child hygiene, nutrition and the Bureau of Tuberculosis. He was on the list of physicians recommended for the post of health commissioner to succeed Dr. Ernest L. Stebbins (THE JOURNAL, March 16, p. 727). On March 11 a resolution was adopted at a meeting of the committee on public health relations of the New York Academy of Medicine urging Mayor William F. O'Dwyer to rescind his recent action in the appointment of Dr. Edward M. Bernecker as health commissioner of New York City and to appoint as commissioner of health one who possesses the training and experience required by the city charter and who will maintain and extend high standards of public health in this city and, by example, throughout the nation. The resolution pointed out that the appointment of Dr. Bernecker is contrary to paragraph 551b of chapter 22 of the charter of the city of New York, which requires that the commissioner of health shall have had at least eight years' experience either in public health administration or teaching or both. These mandatory qualifications of the city charter are comparable to the training and experience required by the state of New York for health officers of all other cities in the state with a population of more than 50,000. In pointing out that Dr. Bernecker has not had the training or experience in public health administration or teaching required by the charter and therefore does not qualify under the law for the position of health commissioner of the city of New York, the academy has no intention of questioning his personal integrity or his qualifications as a hospital administrator. It wishes rather to indicate to the mayor that experience in hospital administration is in no way equivalent to that training or experience in modern public health practice which a health commissioner requires in arriving at important decisions daily which may affect the health of almost eight million people. The New York *Times*, March 13, reported that members of the board of health declared in a resolution that the appointment of Dr. Bernecker was contrary to the public interest and was "an unwarranted and unnecessary risk to the public safety." The *Times* carried a discussion of Mayor O'Dwyer's defense but indicated that he appeared upset at the actions of the board and the academy.

OHIO

Changes in Health Personnel.—Dr. Robert L. Thomas, Kinsman, was recently chosen health commissioner of Trumbull County, Dr. John A. Carter of the city of Middletown and Dr. Charles G. Goll, Stryker, of Williams County.——Dr. Nelson C. Dysart has resigned as health commissioner of Columbus.

Alpha Omega Alpha Lecture.—The annual address of the Alpha Omega Alpha Society of the University of Cincinnati College of Medicine was delivered by Dr. Herman J. Nimitz, Cincinnati, February 22. He spoke on "The Activities of the 25th General Hospital Unit in World War II." Dr. Nimitz was executive officer of this unit, which was composed of the medical and nursing staffs of the Cincinnati General Hospital and the medical school.

Harry Goldblatt Goes to California.—Dr. Harry Goldblatt has resigned as professor of experimental pathology and associate director of the Institute of Pathology at Western Reserve University School of Medicine, Cleveland, effective in August, to become director of an Institute for Medical Research being built for him at Cedars of Lebanon Hospital, Los Angeles. Dr. Goldblatt has been affiliated with the university since 1924. In 1932 he established the fact that high blood pressure can be caused by constriction of the renal artery, which reduces the blood supply to the kidneys.

Joint Committee on Tuberculosis Control Formed.—A joint committee on tuberculosis control has been organized in Ohio to develop a campaign for more adequate tuberculosis legislation in 1947. Dr. Carl A. Wilzbach, commissioner of health of Cincinnati, was appointed chairman of the committee. Seven state groups comprise the joint committee on a state level, and the campaign plans call for the formation of a similar committee in every county in the state within the next few months. The seven groups include the Ohio State Medical Association, the Ohio Conference of Tuberculosis Secretaries, the Ohio Public Health Association, the Ohio Federation of Public Health Officials, the Ohio Hospital Association, the Ohio Tuberculosis Hospital Association and the Ohio State Nurses Association.

TEXAS

Hospital Meeting.—The Texas Hospital Association is meeting at the Hotel Texas, Fort Worth, March 21-23. Holding concurrent sessions are representative groups of hospital administrators, medical record librarians, occupational therapists and woman's auxiliaries. The Texas Conference of the Catholic Hospital Association held a session March 20.

The Russ Endowment Fund.—Dr. and Mrs. Witten B. Russ, San Antonio, parents of the late Dr. Stirling Everett Russ, have given a $1,000 war bond to the Texas Memorial Library, the library of the State Medical Association of Texas, to establish the "Dr. Stirling E. Russ Endowment Fund." Only the interest from this fund, after the bond is matured and reinvested, will be expended in the development of the library, thus perpetuating the fund. Dr. Russ died at his home in San Antonio January 1.

Foundations Contribute to Medical College.—A section of the permanent building of the proposed Southwestern Medical College, to be built on Harry Hines Boulevard, will be known as the Braniff Research Laboratories, which was made possible through a recent $100,000 gift of the Braniff Foundation. The Braniff Foundation was established in 1943 for the purpose of advancing educational, charitable and religious institutions and to aid in the promotion of systems of scientific research. It is headed by Tom E. Braniff, president of Braniff Airways. The section provided by this fund will house the research work of Drs. Arthur Grollman, Warren B. Andrews, Tinsley R. Harrison and Simon Edward Sulkin, Ph.D., all of Dallas. The Hoblitzelle Foundation has given $125,000 to the Southwestern Medical Foundation to make possible the purchase of about 62 acres of land on Harry Hines Boulevard, on which the permanent buildings of Southwestern Medical College will be built. The land was given as a memorial to the late Mrs. Esther Thomas Hoblitzelle, wife of Karl Hoblitzelle, who founded the Hoblitzelle Foundation, which had its inception as a public welfare institution in December 1942. Serving with Umphrey Lee, Ph.D., Dallas, as trustees of the foundation are Judge Sara T. Hughes, Mrs. Earl H. Hulsey, Fred F. Florence and Karl Hoblitzelle. A suitable marker will be placed on the grounds of the college in honor of the late Mrs. Hoblitzelle.

WEST VIRGINIA

Register of Active Tuberculosis Cases.—The bureau of tuberculosis of the state health department has set up a register of all active cases reported to supplant its former records, which consisted of one set of files containing both active and inactive cases. At the time the original tuberculosis file was divided into active and inactive cases the inactive case cards were placed in a closed file, the active ones being placed on the register, furnishing the initial points at which some measure of control would be directed. At the cessation of tuberculosis activity case cards will be removed from the working register and placed in the closed or inactive files. When reactivation is manifest the case card will be again placed on the register. Visible registers have already been set up in seventeen counties, and it is expected that by July 1 registers will have been installed in every local health department. The West Virginia Tuberculosis and Health Association plans to maintain registers for counties having no active health services until local personnel can be found to assume the responsibility. A reciprocal plan for interchange of information between local and state officers has been introduced. It is important that a report be made to the bureau of tuberculosis on every active case at six month intervals. As soon as the county and state registers are operating efficiently the bureau will be equipped to do cumulative analyses for any one county or for the state as a whole.

GENERAL

Management's Responsibility in Care of Employees.—The American Association of Industrial Physicians and Surgeons, in cooperation with the radio office of the University of Chicago, announces a round table broadcast over NBC's coast to coast network, Sunday, April 14, 12:30-1 p. m., central standard time. The topic will be "What Is Management's Responsibility in the Medical Care of Its Employees?" Invited speakers include Dr. Leo Price, medical director, Union Health Center, New York; Dr. Joseph H. Chivers, medical director, Crane Company, Chicago; Dr. Franklin C. McLean, professor of pathologic physiology, University of Chicago; Dr. John J. Wittmer, assistant vice president, Consolidated Edison Company, Inc., New York, and Dr. Lloyd Shoudy, director of medical service, Bethlehem Steel Company, Bethlehem, Pa.

American Surgical Association.—The 1946 meeting of the American Surgical Association will be held at the Homestead, Hot Springs, Va., April 2-4, under the presidency of Dr. William Darrach, New York. Among the speakers will be:

Dr. Frank H. Lahey, Boston, Pharyngoesophageal Diverticulum: Its Management and Complications.
Drs. Hilger P. Jenkins and Rudolph W. Janda, both of Chicago, Studies on the Use of Gelatin Sponge or Foam as a Hemostatic Agent.
Dr. Francis C. Grant, Philadelphia, Results in the Surgical Treatment of Ruptured Disks.
Drs. Arthur W. Allen, Boston, and Claude E. Welch, Belmont, Mass., Subtotal Gastrectomy for Duodenal Ulcer: A Report of Personal Experiences.
Dr. Allen O. Whipple, New York, Radical Surgery in Cases of Calcification of the Pancreas.
Dr. Daniel C. Elkin Atlanta, Ga., and Major Max H. Harris, M. C., Arteriovenous Aneurysm of the Vertebral Vessels: Report of 8 Cases.
Dr. Mercier Fauteux, Westmont, Que., Surgical Treatment of Angina Pectoris: Experiences with Ligation of the Great Cardiac Vein and Pericoronary Neurectomy.

Manuscripts Invited for Norton Medical Award.—The book publishing firm of W. W. Norton and Company announces that it is again inviting manuscripts for submission to be considered for the Norton Medical Award of $3,500 offered to encourage the writing of books on medicine and the medical profession for the layman. The first such award was made to The Doctor's Job, by Dr. Carl A. L. Binger, New York, published last spring, which gave the doctor's point of view on his work. The second was given to Dr. Edward H. Hume, New York, for his book Doctors East, Doctors West, to be published May 3 (THE JOURNAL, March 16, p. 728). Closing date for submission of manuscripts this year is November 1. All particulars relating to requirements and terms may be had by addressing W. W. Norton and Company, Inc., 70 Fifth Avenue, New York 11.

Public Health Association Opens Washington Office.—The subcommittee on medical care of the American Public Health Association, through a grant from the Rockefeller Foundation, has been enabled to establish an office in Washington with a full time technical staff and, according to its news bulletin, will turn its attention immediately to a review of proposed federal and state legislation, recommending to the association the stand it should take with regard to such legislation in the light of the declared principles. The subcommittee will provide information on the medical care problems to the public health profession and will attempt to stimulate leadership in the formation and stimulation of medical care programs. Also, according to the bulletin, it hopes to formulate in detail the specifications of a suitable medical care program and to describe the steps by which such a program can be established, including its organization, financing and administration. Howard M. Kline, Ph.D., has been appointed technical secretary.

Red Cross Establishes Division of Health Services.—The American Red Cross has established an "Office for Health Services" under the direction of a vice chairman for health services. Dr. G. Foard McGinnes has been appointed vice chairman. To the office for health services have been transferred the personnel and functions of (*a*) the office of the medical director, (*b*) nursing services, (*c*) first aid, water safety and accident prevention services, (*d*) nutrition service, (*e*) disaster medical and nursing service and (*f*) medical adviser, G. S. O. The vice chairman for health services is to be the principal health officer of the organization and is to provide for and supervise all liaison with the Offices of the Surgeons General of the Army, Navy and Public Health Service and other medical and health agencies. Cooperating with other vice chairmen, the vice chairman for health services will come under special offices in the area offices. He is also to have similar relationships to the Junior Red Cross, the college units and the insular and foreign operations.

American Association of Anatomists.—The fifty-ninth session of the American Association of Anatomists will be held in Cleveland, April 4-6, with Dr. Jacob P. Schaeffer, Philadelphia, acting as president. The program will be divided between Western Reserve University School of Medicine and the Hotel Statler. Included among the speakers will be:

Joseph E. Markee, Ph.D., Durham, N. C., The Morphological Basis for Menstrual Bleeding.
William F. Windle, Ph.D., and Roland F. Becker, Ph.D., both of Chicago, An Experimental Study of Neonatal Asphyxia.
Drs. Elisha S. Gurdjian and H. R. Lissner, M.S., both of Detroit, Study of Deformations of the Skull by the "Stresscoat" Technic.
James B. Hamilton, Ph.D., Brooklyn, A Secondary Sexual Character That Develops in Man but Not in Women on Aging of an Organ Present in Both Sexes.
Dr. Richard S. Farr, Chicago, Experiments on the Fate of the Transfused Leukocyte.
Edward A. Boyden, Ph.D., Minneapolis, Analysis of Variations of the Bronchopulmonary Segments in the Left Upper Lobes of Fifty Lungs.
Dr. William B. Atkinson, New York, The Production of Ovarian Hormones During Lactation in the Mouse.

Conference on Rural Health.—The first annual National Conference on Rural Health will be held at the Palmer House, Chicago, March 30. Sponsored by the Farm Foundation and the American Farm Bureau Federation, the session will be attended by representatives from each of these groups as well as from the National Grange, the National Farmers' Union and other farm agencies. The conference will follow immediately a three day meeting in Chicago of the Midwest leaders of the farm bureau and two farm representatives from each state as well as two or more representatives from each of the forty-nine state medical societies, including the District of Columbia. The program will include:

Dr. Franklin S. Crockett, Lafayette, Ind., chairman, Committee on Rural Medical Service, American Medical Association, Purpose of Conference.
Dr. Olin West, Chicago, Secretary and General Manager, American Medical Association, Address of Welcome.

Ransom E. Aldrich, Jackson, Miss., chairman, medical care committee, American Farm Bureau Federation.
Dr. Frederick R. Mott, Washington, D. C., U. S. Public Health Service, chief medical officer, Farm Security Administration, A Public Health Program for Rural Areas.
Howard Strong, Washington, D. C., secretary, health advisory council, U. S. Chamber of Commerce, Health Program for Small Communities.
Leland B. Tate, Ph.D., Chicago, rural health services, The Farm Foundation, Health Education for American Farmers.
Hon. J. Percy Priest, Nashville, Congressman, Sixth District, Tenn.

Included among the discussers on the program will be Dr. Leonard W. Larson, Bismarck, N. D., member, Committee on Rural Medical Service, American Medical Association; Dr. Victor Johnson, Secretary, Council on Medical Education and Hospitals, American Medical Association, and Mrs. Charles W. Sewell, Chicago, administrative director of Associated Women of the American Farm Bureau Federation. Covered in the formal program will be discussion of distribution of physicians, the proposed expansion of hospital and clinical facilities in rural areas as contemplated in the Hill-Burton bill now pending in Congress, physician benefits in returning to rural practice after completing an internship and health education of the rural population.

Aero Medical Association.—The seventeenth meeting of the Aero Medical Association of the United States will be held at the Edgewater Beach Hotel, April 7-9, under the presidency of Brig. Gen. Eugen I. G. Reinartz, United States Army. Speakers will include:

Col. Major S. White, M. C., Global Aviation Medicine in the Air Transport Command.
Major George M. Hass, M. C., The Effect of Aircraft Accidents on the Future of Flying Personnel.
Dr. Andrew C. Ivy, Chicago, Future of Research in Aviation Medicine.
Major George A. Hallenbeck, M. C., Parachute Opening Shock.
Dr. Thomas C. Gentry, New York, Aero Medical Experiences in China.
William G. Clark, Ph.D., Minneapolis, and Lieut. Comdr. Ralph L. Christy Jr. (MC), Use of the Human Centrifuge in the Indoctrination of a Navy Fighter Squadron in the Use of the Antiblackout Suit.
Capt. John B. Hickam, M. C., Studies of Missile Casualties in Fliers.
Col. Arnold D. Tuttle, U. S. Army, Ret., Chicago, Passenger Comfort in Commercial Aviation.
Major Edward C. White, M. C., and Lieut. Col. Randolph L. Clark Jr., M. C., The Management of Surgical Emergencies Following Aircraft Accidents.
Wing Comdr. Wilbur R. Franks, Royal Canadian Air Force, Acceleration—Certain Aspects.
Lieut. (jg) John L. Patterson Jr. (MC) and Capt. Ashton Graybiel (MC), A Simple Test of Physical Fitness for General Use.
Capt. Grace H. Stakeman, A. N. C., Medical Care of Casualties in Long Distance Air Evacuation.
Comdr. Howard R. Bierman, MC(S), U.S.N.R., Crash Injury.
Lieut. Col. Paul M. Fitts, A. C., Psychologic Requirements in Aviation Equipment Design.
Brig. Gen. Malcolm C. Grow, M. C., The Use of Body Armor in Aviation During Wartime.
William L. Burkhardt, Ph.D., Dr. Ivy, Dr. Arthur J. Atkinson and Howard Adler, Ph.D., Chicago, A Roentgenographic Study of Bends and Chokes at Altitude.
Major Gen. David N. W. Grant, Washington, D. C., Air Evacuation Activities.
Dr. Herbert Graebner, New York, Auditory Deterioration in Airline Pilots.
Lieut. Comdr. B. G. King, H(S), U. S. N. R., Mechanisms in Anoxia.
Lieut. Col. Robert C. Anderson, M. C., The Motivations of the Flier and His Reactions to the Stress of Flying.
Lieut. M. Henson, H(W), U.S.N.R., and Lieut. E. P. Vollmer H(S), U.S.N.R., Practical Considerations in Protection Against Anoxia.
Capt. Francis E. Randall, A. C., Physical Principles Involved in Pilot Comfort and Efficiency.
Lieut. D. E. Goldman, H(S), U.S.N.R., Mechanical Forces Acting on Aviation Personnel.
Dr. Robert W. Keeton, Chicago, Civilian Aviation and Medical Education.
Wing Comdr. James K. W. Ferguson, Royal Canadian Air Force, Pulmonary Ventilation and Oxygen Requirements in Aircraft.
Capt. Fred S. Grouins, M. C., Capt. A. Lein, A. C., and Lieut. H. Adler, A. C., Changes in the Acid Base Balance in the Blood During Asphyxia and Resuscitation.
Dr. Austin E. Lamberts, Ann Arbor, Mich., Emergency Aid by Air in Isolated Regions.
Dr. William R. Stovall, Washington, D. C., Aviation Medicine and Physical Standards for Airmen.
Mr. Malcolm Y. McCormick, Washington, D. C., A Statistical Consideration of Physical Examinations and Performance Records.
Charles Sheard, Ph.D., Rochester, Minn., The Influence of Certain Physical and Physiologic Factors for Aero Medical Significance on the Rod and Cone Dark Adaptation.
J. B. Bateman, Ph.D., Rochester, Minn., The Effects of Pressure Breathing on the Skin Temperature of Extremities.

CORRECTION

Annual Conference of Secretaries and Editors.—In THE JOURNAL, March 9, page 647, appears the report of the Annual Conference of Secretaries and Editors. On page 652 is a discussion credited to Mr. H. T. Sethman, executive secretary of the Colorado State Medical Society. This should have been credited to Dr. A. C. Sudan of Kremmling, Colo., president-elect of the Colorado State Medical Society.

Government Services

New Head of Coast Guard Medical Division

Rear Admiral Paul M. Stewart, formerly chief inspection officer, Office of the Surgeon General of the U. S. Public Health Service, has been appointed chief of the Coast Guard Medical Division. Dr. Stewart graduated at the University of Cincinnati College of Medicine in 1914 and has been a member of the U. S. Public Health Service since 1914.

Laboratory Aides Ill From Research

The U. S. Public Health Service has reported that in its research to determine a cure for Q fever 22 laboratory workers have been stricken, 5 are in hospitals and 1, a woman elevator operator aged 70, is near death, according to press reports March 3. Other new cases were "suspected" among the 100 employees at the laboratory at Bethesda, Md. The research has been going on since the end of the war. According to Dr. Charles Armstrong, chief of the infectious disease division of the laboratory, while the disease is apparently communicable there is no reason to believe that the outbreak will spread beyond the laboratory. Dr. Armstrong, who has recovered from the disease, thinks he is now immune.

Examinations in Public Health Service

Examinations for appointments of medical officers in the regular corps of the U. S. Public Health Service will begin April 4 at various convenient localities throughout the country. Examinations are for appointments to fill vacancies of assistant surgeon (first lieutenant) and senior assistant surgeon (captain). Regular corps appointments are permanent. They provide qualified doctors with opportunities for a career in one or more of a number of fields, including research, general hospitals, special hospitals, foreign duty and public health programs. Assignments are made according to careful consideration of the officers' demonstrated abilities and experiences. It is expected that doctors now leaving the armed services will find the openings of particular interest. Entrance pay for assistant surgeon with dependents is $3,411 a year and for senior assistant surgeon with dependents is $3,991 a year. Promotions are at regular intervals up to and including the grade of medical director, which corresponds to full colonel at $7,951 a year. Retirement pay at 64 is $4,500 a year. Full medical care, including disability retirement at three-fourths pay, is provided. All expenses of official travel are paid by the government. Thirty days' annual leave with pay is provided. Applicants for the grade of assistant surgeon must be citizens of the United States, must present a diploma of graduation from a recognized medical school, must have had or be in the process of completing the seventh year of college or professional training or experience since high school graduation (two years premedical, four years of medicine, one year internship) and must have a physical examination at the place of oral examination by medical officers of the service. Applicants for the grade of senior assistant surgeon must meet the foregoing requirements and must have had four additional years of postgraduate training or experience.

Examinations will be oral and written. The written examination will be held on May 14, 15 and 16 at places convenient to the candidate and the service. National Board grades may be used for the assistant surgeon examination. The oral examination will be held at 9 a. m. at:

Atlanta, Ga.—Malaria Control in War Areas, 605 Volunteer Bldg., April 22.
Baltimore—Marine Hospital, Wyman Park Drive and 31st St., May 9.
Boston—Marine Hospital, 77 Warren St. (Brighton), May 6.
Chicago—Marine Hospital, 4141 Clarendon Ave., April 30-May 1.
Cleveland—Marine Hospital, Fairhill Road and E. 124th St., May 3.
Denver—617 Colorado Bldg., April 8.
Detroit—Marine Hospital, Windmill Pointe, May 2.
Fort Worth, Texas—U. S. Public Health Service Hospital, April 25.
Kirkwood, Mo., near St. Louis—Marine Hospital, 525 Couch Ave., April 26-27.
Los Angeles—U. S. P. H. S. Relief Station, 406 Federal Bldg., April 9.
Minneapolis—Office of Indian Affairs, 218 Federal Office Bldg., April 29.
New Orleans—Marine Hospital, 210 State St., April 23-24.
New York—Marine Hospital, Stapleton, Staten Island, May 7-8.
Norfolk—Marine Hospital, Hampton Blvd., Larchmont, May 10.
San Francisco—Marine Hospital, 14th Ave. and Park Blvd., April 10-11.
Seattle—Marine Hospital, Judkins and 14th Ave. South, April 12-13.
Washington, D. C.—U. S. P. H. S. Dispensary, Fourth and D Streets S.W., April 4 and May 13.

Application forms may be obtained by writing to the Surgeon General, U. S. Public Health Service, Washington 25, D. C.

Deaths

Charles F. Read ✦ Elgin, Ill.; Rush Medical College, Chicago, 1901; born in Nevada, Iowa, May 27, 1876; specialist certified by the American Board of Psychiatry and Neurology, Inc.; formerly professor of neurology and psychiatry at the Loyola University School of Medicine and assistant professor of psychiatry at the University of Illinois College of Medicine, both in Chicago; past president of the Chicago Neurological Society and the Illinois Psychiatric Society; member of the National Committee for Mental Hygiene; state alienist from 1921 to 1925; since 1930 managing officer of the Elgin State Hospital; formerly managing officer of the East Moline (Ill.) State Hospital and the Chicago State Hospital; at one time staff physician and assistant superintendent of the State Hospital, Kankakee; formerly on the staffs of the Oak Park (Ill.) Hospital and the Mercy and Garfield Park hospitals in Chicago; editor, Manual for State Hospital Attendants and Elgin State Hospital Papers; awarded the honorary degree of doctor of science from Beloit (Wis.) College at its centennial convocation; died March 11, aged 69.

Maximilian Arthur Ramirez ✦ New York; University and Bellevue Hospital Medical College, New York, 1912; born in Cuba May 17, 1891; professor of medicine at the New York Polyclinic Medical School and Hospital; specialist certified by the American Board of Internal Medicine; past president of the Medical Society of the County of New York; fellow of the American College of Physicians and the New York Academy of Medicine; served during World War I; Chevalier of the French Legion of Honor; attending physician and director of the second medical division of the French Hospital; attending physician, New York City Hospital, Welfare Island; attending physician, Municipal Sanatorium, Otisville; consulting physician, St. Francis Hospital, Poughkeepsie, St. Agnes Hospital, White Plains, and Downtown Hospital; died March 4, aged 54.

Robert Ward Lamson ✦ Los Angeles; Harvard Medical School, Boston, 1925; born in Amherst, Mass., July 22, 1880; professor of medicine (preventive medicine and public health) at the University of Southern California School of Medicine; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; member of the American Association for the Study of Allergy; interned at the Stanford University Hospital in San Francisco; member of the staff, Hospital of the Good Samaritan; senior outpatient department, Los Angeles County Hospital; consulting surgeon, Santa Fe Coast Lines Hospital; in charge of allergy clinic, Eye and Ear Hospital and Olive View (Calif.) Sanatorium; died in St. Vincent's Hospital December 31, aged 56, of pneumonia.

A. Bern Hirsh ✦ New York; Jefferson Medical College of Philadelphia, 1882; born in Lancaster, Pa., March 21, 1858; an Affiliate Fellow of the American Medical Association; in 1939 awarded a gold key by the American Congress of Physical Therapy for research work; in 1905 founded the *Weekly Roster and Medical Digest*, now known as *Philadelphia Medicine*, serving as its editor until 1917; established the *New York Medical Week*, serving as its editor and managing editor of its successor, the *Journal of the Medical Society of the County of New York;* formerly chief, physical therapy and occupational therapy, U. S. Veterans Bureau; served during World War I; died in Dobbs Ferry December 21, aged 87, of senility.

Lester Emanuel Frankenthal ✦ Chicago; Chicago Medical College, 1885; born in Chicago, April 16, 1864; for many years clinical professor of gynecology at his alma mater, now known as the Northwestern University Medical School; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; member of the Chicago Gynecological Society and the Central Association of Obstetricians and Gynecologists; corresponding member of the Gynecological Society of Munich; fellow of the American College of Surgeons; senior attending obstetrician and gynecologist at the Michael Reese Hospital; formerly on the staff of St. Luke's Hospital, where he died December 19, aged 81, from complications following a fractured hip.

Nathan Pratt Sears ✦ Syracuse, N. Y.; Johns Hopkins University School of Medicine, Baltimore, 1912; born in Syracuse, N. Y., in 1886; professor of gynecology at the Syracuse University College of Medicine; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons and the American Gynecological Society; fellow of the American College of Surgeons; consultant, Psychopathic Hospital, Syracuse General Hospital and the Hospital of the Good Shepherd, Syracuse University; gynecologist at the Syracuse Memorial Hospital, where he died February 25, aged 60, of aortic stenosis.

Wilbert Watkins Munsell ✦ Surgeon, Lieutenant Commander, U. S. Navy, retired, Lexington, Mass.; the Hahnemann Medical College and Hospital, Chicago, 1901; born in Naples, N. Y., April 3, 1878; member of the Medical Society of the State of New York; entered the U. S. Naval Reserve as a lieutenant (jg) on May 14, 1918; transferred to the medical corps of the regular navy on May 19, 1921; placed on the retired list on Sept. 1, 1940 with the rank of lieutenant commander and because of exigencies of the service was retained on active duty; returned to inactive duty status on Jan. 15, 1943; died in the Memorial Hospital, Easton, Md., Sept. 22, 1943, aged 65, of intestinal obstruction.

Henry Mitchell Smith ✦ Brooklyn; Long Island College Hospital, Brooklyn, 1893; born in 1870; emeritus professor of ophthalmology at his alma mater, where he first served in 1908 as instructor in diseases of the eye and later as clinical professor of diseases of the eye and for many years as professor of ophthalmology and head of the department; specialist certified by the American Board of Ophthalmology; fellow of the American College of Surgeons; consulting ophthalmologist at the Long Island College Hospital; served on the staffs of the Nyack (N. Y.) Hospital, Brooklyn Eye and Ear and Coney Island hospitals; died suddenly February 23, aged 75, of cerebral hemorrhage.

William Henry Lloyd ✦ Major, U. S. Army, retired, Mount Victoria, Md.; University and Bellevue Hospital Medical College, New York, 1900; served during the Spanish-American War, as a captain in the New Mexico National Guard and in World War I; began active duty in the medical reserve corps of the U. S. Army as a first lieutenant on April 26, 1914, in 1917 becoming a major in the medical section of the Officers Reserve Corps; entered the medical corps of the U. S. Army as a major on July 1, 1920; retired Nov. 30, 1935 at his own request after twenty-two years' service; died February 14, aged 68, of coronary thrombosis.

Robert Lonial Bailey ✦ Bremerton, Wash.; University of Texas School of Medicine, Galveston, 1934; interned at the Providence Hospital in Seattle; served a residency at the Northern State Hospital, Sedro Woolley, and on the staff of the Eastern State Hospital at Medical Lake; chief of medicine at Roosevelt Hospital, where he died December 31, aged 41, of cerebral hemorrhage.

Thomas Chenowith Baldwin ✦ Port Orchard, Wash.; Rush Medical College, Chicago, 1903; chief medical examiner for Kitsap County during World War I; served as county health officer; staff physician, Washington's Veterans' Home in Retsil; medical examiner for the Metropolitan Life Insurance Company, New York Life and the Equitable Life Assurance companies; died in Virginia Mason Hospital, Seattle, December 6, aged 67, of carcinoma of the bile ducts.

Amos Willis Ball ✦ Rushville, Ill.; Missouri Medical College, St. Louis, 1886; served as president of the Schuyler County Medical Society and on the local school board; died December 8, aged 84.

William Wesley Ballaine, Bellingham, Wash.; Kentucky University Medical Department, Louisville, 1902; member of the American Medical Association; past president of the Whatcom County Medical Society; in 1928 retired as health officer of Bellingham after twenty years of service; member and medical examiner for the local draft board during World War I; captain, medical reserve corps, U. S. Army, not on active duty; died December 1, aged 67.

William Martin Bigger, Hammond, Ind.; Medical Department of the Western University of Pennsylvania, Pittsburgh, 1897; member of the American Medical Association; served during World War I; died in St. Margaret Hospital December 30, aged 74, of uremia and chronic general vascular arteriosclerosis.

Alfred S. Black, Charleston, W. Va.; Medical College of Virginia, Richmond, 1902; died in a local hospital December 8, aged 83, of pneumonia.

John James Board, Rustburg, Va.; Jefferson Medical College of Philadelphia, 1880; member of the American Medical Association; died December 30, aged 86, of heart disease.

William Riley Bonds, Winfield, Ala.; Medical College of Alabama, Mobile, 1892; died December 25, aged 82, of carcinoma.

Ira Edgar Bowman, Odon, Ind.; Indiana University School of Medicine, Indianapolis, 1910; member of the American Medical Association; died in the Daviess County Hospital, Washington, December 30, aged 64, of carcinoma of the lung.

Ctimir Silas Brazda, Los Angeles; University of Illinois College of Medicine, Chicago, 1942; interned at the Los Angeles County Hospital, where he served a residency; also a D.D.S.; attending oral surgeon at the Los Angeles County General Hospital, the Queen of Angels Hospital and the Alhambra (Calif.) Hospital; died December 8, aged 46.

Bert Barrett Bruce, Alma, Ark.; Kansas City (Mo.) College of Medicine and Surgery, 1919; member of the American Medical Association; served as president and secretary of the Crawford County Medical Society; formerly county coroner; died December 13, aged 68, of generalized arteriosclerosis and acute coronary occlusion.

Annie Sophia Bullock ✠ Alhambra, Calif.; Woman's Medical College of Pennsylvania, Philadelphia, 1912; on the staffs of the Alhambra Hospital, Alhambra, and the Garfield Hospital, Monterey Park; died December 6, aged 72, of cerebral hemorrhage.

Oscar Newton Clark, Greeley, Kan.; Eclectic Medical University, Kansas City, Mo.; 1915; Kansas City (Mo.) College of Medicine and Surgery, 1920; member of the American Medical Association; died December 7, aged 59, of coronary thrombosis.

Adolphus Jackson Crider ✠ Dixon, Mo.; St. Louis University School of Medicine, 1910; died December 2, aged 60, of coronary occlusion.

Garland Franklin Cummins, Nashville, Tenn.; University of Nashville Medical Department and Vanderbilt University School of Medicine, Nashville, 1895; died in the Protestant Hospital December 15, aged 81.

John Francis Curtin ✠ Minneapolis; Harvard Medical School, Boston, 1915; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; served during World War I; on the staffs of the Asbury, Northwestern and St. Mary's hospitals; president of the medical staff of the Abbott Hospital; died December 25, aged 56, of carcinoma of the liver and sigmoid.

Charles Henry Cutler ✠ Peterborough, N. H.; University of Vermont College of Medicine, Burlington, 1892; served as health officer and school physician; on the staff of the Peterborough Hospital; died December 22, aged 78, of arteriosclerosis.

John Edgar Davis ✠ Columbus, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1889; served during World War I; died December 1, aged 78, of cardiorenal disease.

Joseph Vance Davis, Waynesville, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1945; found dead November 8, aged 24, near the administration building of the Peter Bent Brigham Hospital, Boston, where he was serving an internship.

Mary E. Snyder Davis, Colwyn, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1892; died December 1, aged 80, of hypertensive cardiovascular disease.

J. Mercer Dickerson, Peoria, Ill.; Barnes Medical College, St. Louis, 1908; found dead in bed December 2, aged 69.

George McCready Dickson ✠ Adamsburg, Pa.; Medical Department of the Western University of Pennsylvania, Pittsburgh, 1902; served during World War I; on the staff of the Westmoreland County Hospital, Greensburg, where he died December 13, aged 70, of carcinoma of the left lung and rheumatic heart disease.

Ernestine Doychert, Tucson, Ariz.; Medical Department of the University of California, San Francisco, 1900; died in St. Mary's Hospital December 1, aged 66, of coronary occlusion and chronic arthritis.

Daniel John Fennelly ✠ Boston; Tufts College Medical School, Boston, 1911; served during World War I; neuropsychiatrist for the Veterans Administration in the Fall River area; on the staffs of the St. Luke's Hospital in New Bedford, Mass., and the Union and St. Anne's hospitals in Fall River; died December 20, aged 59, of coronary thrombosis.

Henry Andrew Fisher ✠ Brooklyn; Long Island College Hospital, Brooklyn, 1909; member of the American Urological Association; fellow of the American College of Surgeons; specialist certified by the American Board of Urology, Inc.; served during World War I; colonel, medical reserve corps, U. S. Army, not on active duty; formerly attending urologist, Brooklyn Hospital and Norwegian Lutheran Deaconesses' Home and Hospital; died December 4, aged 59.

Julius Frankel, New York; Cornell University Medical College, New York, 1900; formerly on the staffs of the Beth Israel, Manhattan General and St. Mark's hospitals; died in Miami, Fla., December 7, aged 70, of heart disease.

Vance A. Funk ✠ Vincennes, Ind.; University of Nashville Medical Department, 1909; fellow of the American College of Surgeons; on the staff of the Good Samaritan Hospital; died December 31, aged 63, of coronary occlusion and arteriosclerosis.

Raymond V. Glann, Baltimore; Maryland Medical College, Baltimore, 1904; member of the American Medical Association; died December 4, aged 67, of coronary disease.

Stewart Hamilton, Detroit; Northwestern University Medical School, Chicago, 1905; also a graduate in pharmacy; member of the Michigan Hospital Association and the American Hospital Association; at one time instructor in pathology at the Detroit College of Medicine; medical director of the Harper Hospital; formerly assistant surgeon to the Copper Range Mining Company in Upper Peninsula; served during World War I; died December 18, aged 65, of cerebral hemorrhage.

John Thomas Hanna, Burlington, Iowa; State University of Iowa College of Medicine, Iowa City, 1915; served as acting assistant surgeon in the U. S. Public Health Service; major, medical reserve corps, U. S. Army, not on active duty; died in Milwaukee December 18, aged 55, of lobar pneumonia.

Edmund Lee Harrison, Kansas City, Mo.; University Medical College of Kansas City, 1892; member of the American Medical Association; formerly associated with the U. S. Veterans Bureau; died December 23, aged 82, of chronic myocarditis and arteriosclerosis.

Isaiah William Haughey ✠ Fort Collins, Colo.; State University of Iowa College of Medicine, Iowa City, 1889; served during World War I; on the staff of the Larimer County Hospital; died December 5, aged 77, of cerebral hemorrhage.

James Worrall Henry, Cheyenne, Okla.; Columbia University College of Physicians and Surgeons, New York, 1912; member of the American Medical Association; died in Anadarko, December 26, aged 57, of congestive heart failure.

Gerhard William Heuser ✠ Brooklyn; Cornell University Medical College, New York, 1904; on the staff of the Swedish Hospital, where he died December 29, aged 65, of coronary occlusion, bronchopneumonia and arteriosclerotic heart disease.

Carl R. Hiller ✠ Cincinnati; Medical College of Ohio, Cincinnati, 1899; professor emeritus of clinical surgery, University of Cincinnati College of Medicine; member of the founders group of the American Board of Surgery; fellow of the American College of Surgeons; member of the board of trustees and past president of the College of Music; on the staffs of the Good Samaritan Hospital, Cincinnati General Hospital and the Jewish Hospital, where he died December 3, aged 68, of heart disease.

Benjamin Franklin Horner, Otsego, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1887; formerly member of the board of directors of the bank; on the staff of the Borgess Hospital in Kalamazoo, where he died December 16, aged 82, of complications due to a fractured hip received in a fall on the ice.

Siegfried Ickelheimer, Woodside, N. Y.; Ludwig-Maximilians-Universität Medizinische Fakultät, Munich, Bavaria, Germany, 1919; served in the German army during World War I; died December 16, aged 58.

John Dee Jackson ✠ Kerrville, Texas; Washington University School of Medicine, St. Louis, 1914; member of the American College of Chest Physicians; on the staff of the Kerrville General Hospital; died suddenly December 31, aged 55, of heart disease.

Josephine Agnes Jackson, Long Beach, Calif.; Northwestern University Woman's Medical School, Chicago, 1896; Rush Medical College, Chicago, 1903; member of the American Medical Association; author of "Outwitting Our Nerves"; at one time on the staff of the Cook County Hospital in Chicago; died in Palo Alto December 31, aged 80, of heart disease and arteriosclerosis.

Archie Nelson Johnson, Kansas City, Mo.; University Medical College of Kansas City, 1903; member of the American Medical Association; member of the staff of St. Joseph Hospital; died in the Veterans Administration Facility, Wadsworth, Kan., December 6, aged 78.

Albert Bates Jones, Camano, Wash.; Maryland Medical College, Baltimore, 1904; died November 3, aged 74.

Boris Kaplan ✠ New Bedford, Mass.; University of Saratov Faculty of Medicine, Russia, 1918; member of the National Gastroenterological Association; a major and medical officer in the Russian Imperial Army during World War I; on the staff of St. Luke's Hospital, where he died December 25, aged 56, of coronary thrombosis.

Society; fellow of the American College of Surgeons; consultant, Psychopathic Hospital, Syracuse General Hospital and

cal Association; died in the Daviess County Hospital, Washington, December 30, aged 64, of carcinoma of the lung.

Brian Joseph Kelly ✠ Frankfort, N. Y.; University and Bellevue Hospital Medical College, New York, 1915; mayor of Frankfort; past president of the board of education; chairman of the Herkimer County Democratic Committee; on the staffs of the Herkimer (N. Y.) Hospital, Little Falls (N. Y.) Hospital, Ilion (N. Y.) Hospital and St. Elizabeth Hospital in Utica; division surgeon New York Central Railroad; died December 17, aged 54, of coronary thrombosis.

Charles Anselm Kersey, Muncie, Ind.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1872; died December 23, aged 100, of bronchopneumonia.

Commodore Marvin Kimble, Paden City, W. Va.; Maryland Medical College, Baltimore, 1912; served as mayor of Paden City; on the staff of the Wetzel County Hospital, New Martinsville; died in the Johns Hopkins Hospital, Baltimore, December 14, aged 63, of carcinoma of the bladder.

Martin Smith Kirwan, Louisville, Ky.; Kentucky School of Medicine, Louisville, 1906; died in the SS Mary and Elizabeth Hospital December 23, aged 69, of hypertensive cardiovascular renal disease.

Joseph James Kotershall ✠ Cleveland; University of Wooster Medical Department, Cleveland, 1903; for many years on the staff of St. John's Hospital; died December 10, aged 64, of arteriosclerotic heart disease.

George Mannheimer ✠ New York; Kaiser-Wilhelms Universität Medizinische-Fakultät, Strassburg, Germany 1889; fellow of the American College of Physicians; consulting physician, New York Infirmary for Women and Children; died in the Mount Sinai Hospital December 10, aged 78, of cerebral hemorrhage.

James Walsh McClaran ✠ Jackson, Tenn.; Vanderbilt University School of Medicine, Nashville, 1911; member of the Southeastern Surgical Congress; fellow of the American College of Surgeons; decorated by the French government for service with the French army during World War I; transferred to the American army on the entry of the United States into the war; division surgeon, Gulf, Mobile and Ohio Railroad; on the staff of the Memorial Hospital, where he died December 27, aged 57, of cerebral hemorrhage.

Edwin Taylor Morris ✠ San Benito, Texas; University of Texas School of Medicine, Galveston, 1912; local physician and surgeon for the Missouri Pacific Railroad; died in Harlingen November 25, aged 58, of congestive heart disease.

James C. Mudd, Springfield, Ky.; Kentucky School of Medicine, Louisville, 1897; member of the American Medical Association; died December 1, aged 75, of heart disease.

Rudolf Patek, New York; Medizinische Fakultät der Universität Wien, Vienna, Austria, 1908; served a residency

Lieut. Alexander Henry Davis
(MC), U.S.N.R., 1906-1945

Capt. Lloyd B. James
M. C., A. U. S., 1906-1945

Lieut. Comdr. Alfred L. Lyons
(MC), U.S.N.R., 1899-1945

Albert Lenz ✠ Schenectady, N. Y.; Albany (N. Y.) Medical College, 1912; member of the Radiological Society of North America, Inc.; consultant roentgenologist at the Mary McClellan Hospital in Cambridge; on the staff of the City Hospital; consulting surgeon, Ellis Hospital; died February 20, aged 57, of uremia and chronic nephrosclerosis.

at the Sea View Hospital; died in the Westside Hospital November 17, aged 63, of pulmonary embolism following a prostatectomy.

Maurice Schneck ✠ Forest Hills, N. Y.; Long Island College Hospital, Brooklyn, 1911; died February 25, aged 60, of coronary thrombosis.

KILLED IN ACTION

Alexander Henry Davis ✠ Chicago; the School of Medicine of the Division of Biological Sciences, University of Chicago, 1932; interned at the University of Chicago Clinics; at one time affiliated with the Johns Hopkins Hospital in Baltimore; began active duty as a lieutenant in the medical corps of the U. S. Naval Reserve on Dec. 10, 1942; assigned to the U. S. Naval Hospital in San Diego; killed in the Asiatic area April 28, 1945, aged 39, when his ship, the U. S. S. *Pinckney*, was hit by a suicide bomber.

Lloyd Bertram James ✠ Fresno, Calif.; College of Medical Evangelists, Loma Linda-Los Angeles, 1932; interned at the Orange County Hospital in Orange; diplomate of the National Board of Medical Examiners; began active duty as a first lieutenant in the medical corps, Army of the United States, in September 1942; promoted to captain; flight surgeon in the Air Corps; killed in action in Tinian July 3, 1945 aged 39.

Alfred Labori Lyons ✠ Flushing, N. Y.; Vanderbilt University School of Medicine, Nashville, Tenn., 1928; interned at the Long Island College Hospital in Brooklyn; formerly resident physician at the Clifton Springs Sanitarium and Clinic in Clifton Springs; on the staffs of the Queens General, Mary Immaculate and Triboro hospitals, all in Jamaica; served with the Canadian army during World War I; began active duty as a lieutenant commander in the medical corps of the U. S. Naval Reserve on Sept. 27, 1943; killed in action in the Pacific area April 28, 1945, aged 45, when a Japanese suicide plane crashed into an auxiliary hospital transport off Okinawa.

Israel, Manhattan General and St. Mark's hospitals; died in Miami, Fla., December 7, aged 70, of heart disease.

staff of St. Luke's Hospital, where he died December 25, aged 56, of coronary thrombosis.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 23, 1946.

The Minister Who Won't Negotiate

It has been shown in previous letters that the scheme for a national health service is but the climax of the socialistic trend of British politics for many years. So strong is this trend that the scheme was introduced by a government in which the conservative party was predominant. The great majority of the medical profession were opposed to the scheme, but they had a conservative minister of health, with whom they could negotiate. The position changed much for the worse when a socialist government took the place of the coalition government. The conservative minister was immediately denounced for "surrendering to the doctors," though he had only negotiated with them, and his place was taken by a socialist, Mr. Bevan, who listens to the representatives of the medical profession but will not negotiate. He has put before them his proposals, which they are precluded from circulating to the profession because they are confidential. He has listened to the comments and criticisms of the negotiating committee of the profession but withheld his response until he has brought in the bill in the House of Commons. At the moment the position is one of complete calm—the calm before the storm. The *British Medical Journal* points out that, while Mr. Bevan is acting within his rights as a minister in not discussing his proposals, he would not be acting outside them if he freely exchanged views across the table with those chosen to represent the profession. It quotes with approval from the *Observer* "In its doctrinaire passion for nationalizing as much as possible as fast as possible" the cabinet "is minding everybody's business except its own."

Student Health Care Unsatisfactory

The Royal College of Physicians has published a report from its social and preventive medicine committee on student health services. Although the problem of sickness among university students is serious, many university authorities are indifferent to corrective measures. Only perfunctory attention, from the point of view of health, is paid in some instances to matters of diet and lodgings. The report recommends that the universities accept greater responsibility for the health of students. Arrangements should be made for medical examination on entry and for periodic examinations while at the university. Medical nursing care should be available to students who are ill. Inspection of lodgings should be undertaken by special officers of the university. It is recommended that the diet of students be improved, including the provision of canteens. It is further suggested that a special medical officer might do for universities and colleges what an industrial medical officer does in an enlightened industrial concern. What appears to be the first appointment of this kind has been made by the University of Aberdeen. It has appointed a full time physician at a salary of $4,280 a year to be in charge of the student health service.

The Danger of Vaginal Insufflation During Pregnancy

The danger of vaginal insufflation during pregnancy is shown by a case reported by Dr. C. H. Walsh to the North of England Obstetric and Gynecologic Society. A primigravida aged 17 was treated with picratol insufflations for leukorrhea at about the thirtieth week of pregnancy. The first insufflation did not produce discomfort. A week later insufflation was performed by a nurse with the patient lying in the left lateral position. Six or seven compressions of the insufflator bulb were made. The patient rapidly became cyanotic and dyspneic, became unconscious and died within five minutes. Necropsy revealed a fetus of thirty to thirty-one weeks' gestation. The placenta was attached to the posterior upper segment of the uterus. There was a small detachment at the lower border, with stripping of the membranes down to the cervix. A trace of picratol powder was found in a maternal sinus. The inferior vena cava was filled with air; the right auricle of the heart contained frothy blood. The cause of death was obstruction of a pulmonary artery and right heart failure due to air embolism.

The insufflator used delivered about 50 cc. of air and powder. If the rubber cone made an airtight connection between the introitus, six or seven compressions would introduce 350 cc. of air and powder at a pressure of at least 150 mm. Under these conditions even a small venule might absorb air, causing air embolism. Vaginal insufflation is contraindicated in pregnancy or in cases of bleeding from the uterus. Tubal insufflation should be discarded in favor of the iodized oil technic.

PARIS

(From Our Regular Correspondent)

Feb. 19, 1946.

Tuberculosis During the Wars of 1914 and 1939

L. Moine, statistician, has published a comparative study on tuberculosis mortality in the last two wars. During the war of 1914-1918 an increase of the tuberculosis death rate was noted. The death rate rose from 215 per hundred thousand inhabitants in 1910 to 278 in 1918, an increase of 29.3 per cent. During the war of 1939-1945 and the occupation it attained 159 in 1941, the highest rate, as against 120 in 1936, which represents an increase of 32.5 per cent. The Bulletin of General Statistics of France estimates the total number of deaths from tuberculosis as 315,000 for the period from September 1939 to May 1945. Children up to 2 years of age were severely stricken. An increase of 21 per cent for adolescents from 15 to 19 and of 88.5 per cent for men from 25 to 29 has been observed. The author concludes that this increase among men is due to their greater reaction to the restrictions and the hardships of life during the war and the occupation. The difficulty of placing patients in institutions has caused an increase of contact infection in families, especially among the poor.

Activity of the Epidemiologic Service

An epidemiologic service was organized in 1944 in the Departmental Public Office of Social Hygiene. In every "département" (district) the departmental inspector represents the health authority. The service consists of a secretary and of "assistantes sociales" (district nurses). In the department of the Seine from early in 1944 to October 1945, 7,189 infected women and 681 refractory patients were reported; 35 per cent of the former and 40 per cent of the latter were found. In accordance with the sanitary convention agreed to by forty-two countries, including France, in 1939, circulars have recently been issued by the prefects closing licensed brothels.

Antivenereal Measures in the Seine District

The Ministry of Public Health has published a circular which emphasizes previous orders making it obligatory for doctors to make a plain declaration, without a name, or a nominative declaration in the case of refractory patients, to the district (department) sanitary authority for every new case of venereal disease. The doctor must submit to patients the legal notice regarding the refusal to submit to treatment. He must also communicate to the departmental health service all information from the patient concerning the probable origin of the disease.

Miscellaneous

The Society of Medical Electroradiology of France, the Society of Electrotherapy and Radiology and the French Society of Physics commemorated, at an official meeting, the fiftieth anniversary of the discovery of the x-rays.

Prof. Henri Vincent, well known through his work on typhoid vaccination and gangrene, celebrated his fiftieth anniversary as a professor at the Val-de-Grace military hospital. He is a member of the Academy of Medicine and is general medical inspector of the French army. He is 83 years old and still pursues his scientific activity.

Dr. Hartmann, ophthalmologist of the Paris Hospitals, late associate professor of ophthalmology at Columbia University, delivered a lecture on "Medicine in the United States" and on "The Life of American Doctors."

Prof. Gaston Milian has died at the age of 74. He was well known in French dermatosyphilology and was among the first who introduced arsphenamine in France. His works on reactivation of the Bordet-Wassermann test, on the theory of biotropism, to which he has given his name, and his numerous studies on dermatology are widely known. He was a member of the Academy of Medicine and president of the League Against Venereal Disease.

PUERTO RICO

(From Our Regular Correspondent)

Feb. 15, 1946.

Pending Legislation

The following bills have been introduced in the House of Representatives and the Senate, now in regular annual session:

S. B. No. 114, to appropriate the sum of $518,000 to the Department of the Interior for the construction and equipment of new municipal hospital facilities and health centers, on recommendation of the commissioner of health, and to enlarge and reconstruct existing facilities. This appropriation shall be available July 1, 1946.

S. B. No. 100, to appropriate the sum of $900,000 to the University of Puerto Rico for scholarships to medical students during the fiscal years 1946-1947 to 1951-1952 inclusive.

H. B. No. 41, to appropriate the sum of $2,100,000 for the construction of hospitals and health units in Puerto Rico, to accept the benefits of federal grants-in-aid for the construction and equipment of hospital facilities and to determine the disposition of these funds.

The following bills are opposed by the Puerto Rico Medical Association and other professional groups in San Juan:

S. B. No. 9, to amend sections 2, 3, 4 and 6 of Act No. 26 of April 10, 1942, amended by Act No. 13, Nov. 23, 1942, to authorize the Board of Medical Examiners of Puerto Rico to permit the practice of medicine by issuing temporary licenses without previous examination, to establish rules and regulations by the board of medical examiners for the admission of graduate physicians from recognized medical schools to practice medicine in Puerto Rico provided that such licenses shall be valid only until June 30, 1950 and will be subject to revocation and to the provisions of any act that affects the practice of medicine in Puerto Rico. (This law is not applicable to candidates who failed in their examinations before the Medical Board of Puerto Rico or those who had not passed the required examination before the enforcement of this act.)

S. B. No. 8 amends sections 2, 3, 4 and 6 of Act No. 26 of 1942, providing that any graduate physician from a duly recognized university, at the discretion of the Board of Medical Examiners of Puerto Rico, may ask the board to issue him a license to practice his profession in any municipality of Puerto Rico or division of the insular government during the period of emergency determined by this act and under the terms and conditions expressed by this act. The purpose of this legislation is to permit the practice of medicine in this island by foreign physicians, who are authorized by this law to request such a provisional license from the board if certain requisites are filled by the candidate. Such physicians can practice their profession privately if they sign a contract to serve with any municipality in Puerto Rico under prescribed rules and regulations of the health commissioner. All candidates, however, must show evidence that they have finished a period of hospital training in their countries of origin for a period of at least one year after graduation from a recognized university or medical college. Not more than 100 foreign physicians would be admitted in Puerto Rico under this system of special licenses during the period of emergency specified by this act.

BUENOS AIRES

(From Our Regular Correspondent)

Jan. 5, 1946.

Quinidine Substitute

An interesting article was recently published in the *Ciencia e Investigación* by Drs. Venancio Deulofeu, Rafael Labriola, Oscar Orias and E. Moisset de Espanés of Buenos Aires and Alberto C. Taquini of Córdoba. They report experiments with the alkaloid alpha-fagarine, which has effects on the heart similar to those of quinidine. The credit of having isolated several alkaloids from a nut tree of the Fagaracea family belongs to Stuckert, who obtained the alpha, beta and gamma fagarines. Trees of this genus grow in large numbers in the northern and central areas of Argentina. The Argentine authors found that the formula of alpha-fagarine is $C_{15}H_{23}NO_4$ and they obtained accurate knowledge of the chemical structure of the substance. Stuckert and Sartori, while carrying on studies on the pharmacologic effects of the substance in batrachians and rabbits, found that it depresses the heart. The results of the experiments by Moisset de Espanés and Moyana Navarro on dogs indicated that alpha-fagarine causes depression of the heart. Chronaxia of the myocardial fibers is prolonged. The threshold of tachysystole and of auricular and ventricular fibrillation (as determined by the faradic current) is increased. The effects of alpha-fagarine on the last mentioned changes are greater than those of quinidine. Alpha-fagarine rapidly controls auricular fibrillation, spontaneously developed during experimental exposure of the animal's heart, and diminishes the danger of primary ventricular fibrillation following experimental coronary occlusion in dogs, whereas quinidine lacks this effect. Rabbits and dogs tolerated doses of 5 mg. of alpha-fagarine for each kilogram of body weight by the intravenous route. The dose was administered intravenously three times a day for forty-five consecutive days. The animals did not show any toxic reactions.

Taquini administered alpha-fagarine to 6 patients with auricular fibrillation. The patients had been observed for several months before administration of the alpha-fagarine. Four patients in the group had coronary heart disease and 2 had rheumatic heart disease (mitral stenosis). Quinidine in the ordinary doses had failed in 5 cases. Alpha-fagarine was administered intramuscularly in only one dose, which varied from 0.06 to 0.10 Gm., after failure of quinidine. Sinus rhythm was reestablished within thirty minutes after administration of the drug in all cases. Because of these results the authors believe that alpha-fagarine is an important drug in the therapy of heart diseases and in certain disorders of cardiac rhythm.

Sanitation in Chile

Dr. Nacianceno Romero y O., head of the National Department of Public Health, recently published a report on the functions, aims and work carried on by the department in the last few years. They include (1) education of technicians for public sanitation, (2) work on sanitation in Chile, (3) campaigns against infectious diseases, (4) organization of units of sanitation and health centers and (5) establishment of the proper postwar sanitary measures in relations with other countries of the world. In dealing with infectious diseases it was found that the outbreak of smallpox which occurred in the northern region of Chile was imported by a foreign family who entered the country with the disease. During the epidemic 35 cases of the disease with 7 deaths were reported. In the city of Santiago 500,000 persons reported for vaccination. Certain experiments

carried out in Chile resulted in the development of a combined vaccine for diphtheria and whooping cough. The vaccine is still in the experimental stage. The number of cases of typhoid is about 5,000 a year, with a death rate of 10 per cent. Tuberculosis is an acute problem in Chile. Reporting the cases is not obligatory. The disease is second as a cause of death. The number of beds available for tuberculous patients in the acute stage of infection is far below that which is necessary. The disease is epidemic throughout the country. The most necessary measure is the isolation of patients who are infectious. The patients are a menace for the health of others at home, in the streets and at work. Typhus exists but does not justify alarm. Meningococcic meningitis and scarlet fever are epidemic in the country. However, the proper statistical significance is not given to these diseases. Seven hundred cases of anthrax were reported in 1943. The disease can be prevented by proper care of workers. The laws of Chile are not satisfactory.

A law was passed in March 1943 by which the chief of the National General Department of Public Health was authorized by the government to organize an energetic crusade against venereal disease, which constitutes one of the most acute problems in Chile. Patients with early syphilis have therapy with "massive" doses of arsenicals. The treatment is administered in antisyphilitic centers. Penicillin is to be administered in certain cases. A committee for supervision of industrial hygiene and protection of workers was established in 1943. Attention has been given to possible or actual poisoning of miners working in manganese mines as well as to silicosis. General and infant mortality has diminished. The death rate of infants from birth to 1 year of age was 231 for 5,000 births of living infants in 1934 and 155 for the same number of births in 1943. The general death rate diminished from 26 deaths per thousand persons in 1934 to 19 in 1943.

Brief News Notes

Dr. Nerio Rojas, professor of legal medicine, has been appointed dean of the Faculty of Medicine of the University of Buenos Aires.

The following doctors were appointed to the Academia Nacional de Medicina: Drs. Gregorio Aráoz Alfaro and Carlos Bonorino Udaondo, president and vice president, respectively; Drs. Florencio Etcheverry Boneo and Mario J. del Carril, honorary and actual secretaries, respectively; Dr. Juan M. Obarrio, treasurer; Dr. Pedro A. Maissa, regular academic member; Drs. Fortunato Quesada and Francisco Graña (Peru) were appointed honorary Latin-American members; Dr. Carlos Enrique Paz Soldán (Peru), Latin-American corresponding member, and Dr. E. Meulengracht (Denmark), foreign corresponding member.

New branches of the hemotherapeutic center of the state are to be organized in the military hospitals of Paraná, Córdoba, Tucumán, Mendoza, Salta and Campo de Mayo by resolution of the authorities at the National Ministry of War.

Dr. Benardo A. Houssay, professor of physiology of the Faculty of Medicine of the University of Buenos Aires, was recently appointed foreign member of the Royal Academy of Sciences of Sweden.

Dr. Mariano R. Castex, regular professor of clinical medicine of the Faculty of Medicine of the University of Buenos Aires, was recently appointed doctor *honoris causa* of the university at the request of the Faculty of Medicine of Paris.

Crusade Against Tuberculosis

Dr. Livio R. Zumino is the head of the Manuel de Abreu Center for photographic and roentgen census of tuberculosis. In the five years from 1939 to 1944 examinations were carried out on 249,286 persons. The tuberculosis rate was found to be 6.68 per cent in persons who lived with patients with tuberculosis and 2.43 per cent in the group not living with tuberculous patients. The number of patients with tuberculosis discovered by the examination was 12,612 out of 249,286 persons examined. The disease was in an early stage in the majority of instances. Permanent recovery of 90 per cent of the patients was obtained with the proper therapy. Patients who are sent by their physicians to the center for x-ray examination pay 2 Argentine pesos ($0.48) for the roentgenograms, whereas those sent by dispensaries or from hospitals pay 1 Argentine peso ($0.24).

BRAZIL

(From Our Regular Correspondent)

SÃO PAULO, Feb. 23, 1946.

Chemotherapy of Tuberculosis and Leprosy

Dr. E. Biocca read a paper before the Society of Biology of São Paulo describing his studies on the tuberculostatic value in vitro of the trichloroacetylic radical, of numerous azo compounds, of two organic cupric derivatives of sulfanilamide, of derivatives of nitroaminodiphenylsulfone and diaminodiphenylsulfone. The compounds with organic sulfur were prepared by Professor Quintino Mingoja and Dr. Berti in the Laboratório Paulista de Biologia; the others were prepared by Professor Senise in the Laboratório of Quimica of the Faculdade de Filosofia of the University of São Paulo. It has been possible for Dr. Biocca to confirm the high tuberculostatic value in vitro of the trichloroacetylic radical. This property could be shown only when the trichloroacetylic radical was bound to a benzene ring in an aminic function. The trichloroacetylic radical bound in an aminic function, without the benzene ring (trichloroacetamide) as well as a benzene ring bound to a simple acetylic group (acetanilide) did not present any evident tuberculostatic value.

Among the azo-derivatives the most evident bacteriostatic antituberculosis activity in vitro was shown by an x-benzene-B-trichloroacetylnaphthylamine.

A cupric organic derivative was strongly tuberculostatic, but at the same time highly toxic for animals. The following sulfonamides, as has been observed by several authors, were strongly tuberculostatic in vitro: sulfathiazole, sulfapyridine, sulfadiazine, sulfamerazine and N'acetylsulfanilamide.

Among derivatives of 4-nitro-4'aminodiphenylsulfone, Schiff's bases, acetylderivatives and sulfones with halogenated radicals were more effective than the formylderivative 117 M and the trichloroacetylic derivative.

Of the derivatives of 4-4' diaminodiphenylsulfone the 4-4' ditrichloroacetyldiaminodiphenylsulfone Diclorane and the 4-4' diformyldiaminodiphenylsulfone Formilone are compounds of the highest interest in the chemotherapy of alcohol-acid fast microbes.

Marriages

WILLIAM THOMAS DANIEL, Franklin, Tenn., to Capt. Ruth Stratton, Army Nurse Corps, in Beaver Falls, Pa., February 1.

HAROLD PRESTON BURBAGE to Miss Zylphya Elizabeth Haywood, both of Charleston, S. C., in Columbia, December 27.

GEORGE ALLYN CHAPMAN, Shenandoah Caverns, Va., to Lieut. Gladys Fulk, Army Nurse Corps, in Richmond recently.

DAVID SANFORD CITRON, Charlotte, N. C., to Miss Doris Berman of Waterbury, Conn., in St. Louis, February 14.

B. S. HENRY, Darling, Miss., to Miss Emily Mary Theresa Johnston of Oxford, England, Sept. 30, 1944.

JOHN DAVID TAYLOR, Winston-Salem, N. C., to Miss Alma Louise Moore at St. Pauls, February 8.

FRANKLIN BERNARD OTT, Newark, N. J., to Miss Claire Moriarty of Maplewood, February 16.

ROY W. JOHNSON, Los Angeles, to Miss Merle Barfield at Riverside, Calif., December 29.

ELY ELLIOTT LAZARUS to Miss Joy Sue Koslow, both of New York, February 1.

ROTAN LEE, Bushkill, Pa., to Miss Bessie O. Hart of Steelton, January 5.

Bureau of Investigation

MISBRANDED PRODUCTS

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the Federal Security Agency

[EDITORIAL NOTE.—These Notices of Judgment are issued under the Food, Drug and Cosmetic Act, and in cases in which they refer to drugs and devices they are designated D.D.N.J. and foods, F.N.J. The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the date of shipment; (4) the composition; (5) the reason for the charge of misbranding, and (6) the date of issuance of the Notice of Judgment.]

Bio-Mineral.—Bio-Mineral Products Company, Detroit. Shipped Dec. 21 and 22, 1942, and Jan. 2, 1943. Composition: essentially a watery solution of ferric sulfate (about 3.4 grains per teaspoonful), smaller amounts of the sulfates of aluminum, calcium and magnesium, and a phosphate. Misbranded for these reasons, among others: that label falsely represented product effective for rheumatism, constipation, weak kidneys, colonic disorders, hemorrhoids and appendicitis; that despite label claims, the mixture, when taken as directed, would not supply any mineral except iron that would substantially supplement mineral deficiency, and because label statement of composition failed to mention that, of the various ingredients declared, none except ferric sulfate was of any material significance when product was taken as directed.—[*D. D. N. J., F. D. C. 989, November 1944.*] Later actions brought against this concern were *D. D. N. J. 1180* and *1245*, both issued in June 1945.

Domino Brand Antiseptic Rubbing Compound.—Halitosine Company, St. Louis. Shipped between Sept. 19 and Oct. 9, 1941. Composition: essentially water, isopropyl alcohol approximately 9 per cent by volume, methyl salicylate, boric acid and menthol. Misbranded because quantity was less than label stated; because of false label claim, "Antiseptic," which the product was not, and because label falsely represented that product was rubbing alcohol or its equivalent.—[*D. D. N. J., F. D. C. 935; October 1944.*]

Domino Brand Superior Rubbing Compound.—Halitosine Company, St. Louis. Shipped Aug. 29 and Oct. 8, 1942. Composition: essentially water and 23 per cent of isopropyl alcohol, with small amounts of boric acid, thymol, menthol and methyl salicylate. Misbranded because name and label directions for massaging and sponging falsely represented product to be extensively marketed as a rubbing alcohol compound and to contain approximately 70 per cent of alcohol or its equivalent, whereas it contained only 23 per cent of isopropyl alcohol.—[*D. D. N. J., F. D. C. 983; November 1944.*]

DPS Formula 50.—Dartell Laboratories, Los Angeles. Shipped June 19 and July 9, 1942. Adulterated and misbranded because of false label claim: "Each Tablet Contains Not Less Than . . . Vitamin B_2 348 Gammas."—[*D. D. N. J., F. D. C. 968; November 1944.*] Also adulterated and misbranded under the provisions of the law applicable to foods, as reported in *F. N. J. 5776.*

Elixir Quinux.—S. F. Durst & Company, Philadelphia. Shipped March 20, 1942. Adulterated and misbranded because falsely represented on label to contain 2 grains of quinine sulfate per fluid ounce, whereas it contained not more than 0.42 grain of this substance per fluid ounce.—[*D. D. N. J., F. D. C. 962; November 1944.*]

Formula 8-12 Vitamins-Minerals.—Universal Products Company, Cleveland. Shipped Jan. 10 to 14, 1943. Composition claimed on label: soy bean meal, wheat embryo, gum karaya, brewer's yeast, kaolin, kelp, activated ergosterol, natural vitamin A ester, thiamin hydrochloride, riboflavin, dicalcium phosphate, iron bihydrogen (sic!), potassium iodide and oil of orange. Misbranded because falsely represented that product was of significant nutritional value because of its vitamin E, vitamin B_6 and other factors of the B complex as found in brewer's yeast and the elements potassium, sulfur, sodium, magnesium, copper, zinc, chlorine and manganese; and use of the product would insure normal functioning of the brain, eye, pituitary gland, parathyroid gland, thymus, heart, liver, gall bladder, kidneys, prostate and many other organs.—[*D. D. N. J., F. D. C. 944; October 1944.*] Also declared misbranded under the provisions of the law applicable to foods, as reported in *F. N. J. 5793.*

R & R Ultra Violet Ray and Radiation Machine.—Lawndale Laboratories, Lawndale, Calif. Shipped June 29, 1942. A high voltage mercury vapor discharge tube. Misbranded because of these label misrepresentations, among others: that the device would cure or prevent arthritis, acne, asthma, gout, jaundice, carbuncles, anemia, goiter, deafness, erysipelas, locomotor ataxia, psoriasis, female trouble and many other disorders; and that it would give off ultra violet rays of adequate intensity to produce in the body vitamin D in an amount sufficient to compensate in an important respect for the deficiency of vitamin D resulting from indoor occupations and unfavorable climatic conditions, whereas the device would produce ultra violet rays of only weak intensity and supply little, if any, vitamin D to the body.—[*D. D. N. J., F. D. C. 981; November 1944.*]

Vitaminerals.—Vitaminerals Company, Los Angeles. Shipped between May 5 and 27, 1942. Consignment comprised quantities of Vitaminerals VM 1, 1+, 100 and 120. The first two contained various plant materials, the third, minerals, and the fourth, sulfates of iron and aluminum, with glycerin and water. Misbranded because of label misrepresentations: that No. 1 would help arthritis, colds, hemorrhoids, neuralgia, neurosis, obesity and tonsillitis; No. 1+, most of the same disorders and a few more; No. 100, female complaints, and No. 120, colonic, ear and throat troubles, anemia, asthma and many other conditions.—[*D. D. N. J., F. D. C. 946; October 1944.*] Under *D. D. N. J. 1041*, issued in March 1945, Vitaminerals VM Nos. 1, 100, 120 and 150 and 204 Pneumatic Dilator (a device sold for rectal disorders) were declared misbranded because of label misrepresentation.

Correspondence

NOCTURNAL GASTRIC SECRETION IN DUODENAL ULCER

To the Editor:—In the paper on "Nocturnal Gastric Secretion in Duodenal Ulcer" by Sandweiss and others in THE JOURNAL, February 2, the following data were presented:

1. Both normal persons and patients with duodenal ulcer secrete acid gastric juice during the night of approximately the same hydrochloric acid concentration following 6 p. m. meals.

2. Under the same conditions as 1 the volume of the gastric juice obtained by continuous suction is approximately the same.

3. When intermittent single aspirations are performed, duodenal ulcer patients have a greater volume of gastric juice than normal persons, whereby it is shown that this increased volume is not caused by hypersecretion but by delayed emptying.

It seems that so wedded is the mind of gastroenterologists to the importance of hypersecretion and increased hydrochloric acid in duodenal ulcer that quite other evidence is discussed by them as though it supported their attitude. Thus in the discussion following the paper Dr. Walter C. Alvarez says:

> Sandweiss and his associates have confirmed the fact that the person with ulcer tends to go on secreting after his stomach is emptied for the night.

But apparently this happened to their normal controls too. Obviously in this respect, then, no special characteristic behavior of the ulcer patient has been shown. Dr. Burrill B. Crohn says:

> The important conclusion from this paper is the necessity for the treatment during the night by some means . . . to obtain a neutralization of the night secretion in the ulcer cases.

Since the night secretion in ulcer cases did not differ from that in the normal controls, the question naturally arises Why treat normal conditions?

Dr. A. C. Ivy says:

> However, we find, as others, that some asymptomatic subjects secrete as much interdigestive secretion as patients with an active duodenal ulcer. Thus the factor which I suspect caused the observations of those authors to be somewhat out of line with those of others is that the ulcer in their patients was relatively inactive.

If I understand English, I should say that the second of Dr. Ivy's sentences is a perfect non sequitur. He continues further:

> Since it has in my opinion been established that free acidity is one of the chronicity factors in peptic ulcer, the authors are justified in calling attention to the significance of the "night secretion" especially in that group of patients who tend to be refractory to management.

To a nongastroenterologist, this paper shows delayed emptying of the gastric contents to be the distinctive feature in the ulcer cases. It is entirely illogical to use this observation in support of the importance of hypersecretion and hyperchlorhydria.

Apparently it is difficult to allow a new observation to change the pattern of our accustomed thought.

ALICE R. BERNHEIM, M.D., New York.

MALARIA IN ST. LOUIS AREA

To the Editor:—The following observation regarding tropical types of malaria transplanted to the St. Louis area may be of some interest:

I was a resident in the St. Louis City Hospital from June 1904 to June 1910. The St. Louis World's Fair held in 1904 attracted many visitors from all parts of the world. Many came from tropical and subtropical countries and islands. Many of these tropical visitors were residents in the various concessions at the fair for about seven months in 1904.

Our local mosquitoes naturally became carriers for almost all types of malaria. Before 1904 our City Hospital records showed an average admission of 1 to 3 malaria patients daily during the summer and fall months. During 1904 quite a number of malaria patients, residents at the fair, from the tropics were admitted to the hospital, suffering from estivoautumnal and other tropical types of malaria. Local residents during this season were not much affected. During the late spring, summer and fall of 1905, however, we frequently averaged 25 to 35 or more malaria patients daily, mostly residents of our local territory. These persons were suffering from all types of malaria, and during this period 7 were admitted suffering from so-called congestive chills or malignant malaria and died within a few hours or two to three days after admission.

During the malaria season of 1906 the malaria admission rate dropped to less than one third of 1905, and after 1907 the normal average of before 1904 was struck and maintained.

I have not had time to compile exact statistics. This might prove to be an interesting research, but the figures cited are approximately correct.

CLEVELAND H. SHUTT, M.D., St. Louis.

BLOOD GROUPING

To the Editor:—In THE JOURNAL, January 12, Dr. James D. Edgar directs attention to what he justifiably suspects is an error in my article (THE JOURNAL, Nov. 17, 1945, p. 801) in reporting the infant of a mother of blood group AB as belonging to group O. This erroneous report resulted from the blood type determination having been made in the early newborn period before the blood group characteristics were adequately established. It seems improbable that there was sufficient transfused blood of group O present in this infant's circulation to have contributed significantly to this erroneous result. When the blood was again checked at the approximate age of 7 months it was found to be of blood group B. The theory of Bernstein thus remains unchallenged. Regrettably because this infant's ABO blood type had no direct relationship to the essential thesis of the paper, the laboratory report of this finding did not receive sufficiently critical attention.

CLIFFORD H. HARVILLE, M.D., Warsaw, N. Y.

RETROGRADE INJECTION

To the Editor:—The term "retrograde injection," when it is used with reference to varicose veins, is ambiguous. The ambiguity arises from the fact that the flow of blood in varicose veins is reversed (Trendelenburg positive). Consequently a type of injection which, if made into a normal vein, would be properly designated "retrograde" (against the normal direction of flow) could not be so designated if the injection should be made into a varicose vein in which the flow was reversed. However, I doubt if authors or readers generally will keep in mind the suggested distinctions and, for clearness, I believe it will be necessary for authors who use the word "retrograde" in writing of varicose veins to explain their use of it.

FREDERICK L. SMITH, M.D., Rochester, Minn.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in THE JOURNAL, March 16, page 735.

BOARDS OF MEDICAL EXAMINERS

ARIZONA:* *Examination.* Phoenix, April 2-3. *Endorsement.* Phoenix, April 6. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS:* *Medical.* Little Rock, June 6-7. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 6. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CONNECTICUT:* *Endorsement.* New Haven, March 26. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven.

DELAWARE: *Examination.* Dover, April 9. *Reciprocity.* Dover, April 16. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

FLORIDA:* Jacksonville, June 24-25. Sec., Dr. Harold D. Van Schaik, 2736 S.W. Seventh Ave., Miami 36.

GEORGIA: Atlanta and Augusta, March 27-28. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

HAWAII: Honolulu, July 8-11. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

IDAHO: Boise, July 9. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

ILLINOIS: *Examination.* Chicago, April 2-3. *Reciprocity.* Chicago, April 4. Supt. of Registration, Department of Registration & Education, Mr. Philip Harman, Springfield.

INDIANA: Indianapolis, April 25-27. Sec., Board of Medical Registration & Examination, Dr. W. C. Moore, 301 State House, Indianapolis 4.

IOWA:* Iowa City, March 25-27. Dir., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

KENTUCKY: Louisville, March 25-27. Sec., State Board of Health, Dr. Philip E. Blackerby, 620 S. Third St., Louisville 2.

MARYLAND: *Homeopathic.* Baltimore, June 18-19. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MICHIGAN:* Detroit, March 26-28. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MINNESOTA:* March 26 and April 16. Sec., Dr. J. F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

MISSISSIPPI: June. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

MONTANA: Helena, April 1-3. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

NEBRASKA:* Omaha, March 25-27. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

NEVADA: Carson City, May 6. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO:* Santa Fe, April 8-9. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 24-27. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

NORTH CAROLINA: Raleigh, March 25-26. Act. Sec., Mrs. Louise J. McNeill, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: Grand Forks, July 2-5. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OREGON:* *Endorsement.* Portland, April 27. *Examination.* Portland, July 24-26. Exec. Sec., Miss Lorienne M. Conlee, 608 Failing Bldg., Portland 4.

PENNSYLVANIA: Philadelphia and Pittsburgh, April. Act. Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Building, Harrisburg.

RHODE ISLAND: Providence, April 4-5. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA:* Pierre, July 16-17. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

TENNESSEE:* Memphis and Nashville, March 27-29. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis 3.

TEXAS: Austin, March 27-29. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

VERMONT: Burlington, March or April. Sec., Dr. F. J. Lawliss, Richford.

VIRGINIA:* Richmond, March 25-28. Sec., Dr. J. W. Preston, 803 Medical Arts Bldg., Roanoke.

WASHINGTON:* Seattle, July 11-12. Sec., Department of Licenses, Miss Nell Adams, Olympia.

WEST VIRGINIA: Charleston, April 1-3. Commissioner, Public Health Council, Dr. John E. Offner, State Capitol, Charleston 5.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARKANSAS: Little Rock, May 1. Sec., Mr. L. E. Gebauer, 701 Main St., Little Rock.

DISTRICT OF COLUMBIA: Washington, April 22-23. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: Gainesville, June 4. Final date for filing application is May 20. Sec. Dr. J. F. Conn, John B. Stetson University, DeLand.

IOWA: Des Moines, April 9. Dir., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

MICHIGAN: Ann Arbor and Detroit, May 10-11. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

MINNESOTA: Minneapolis, April 2-3. Sec., Dr. Raymond N. Bieter, 126 Millard Hall, University of Minnesota, Minneapolis 14.

NEBRASKA: Omaha, May 7-8. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

TENNESSEE: Memphis and Nashville, March 25-26. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

WISCONSIN: Madison, April 6. Prof. R. N. Bauer, 152 W. Wisconsin Ave., Milwaukee 3.

POSTGRADUATE CONTINUATION COURSES FOR VETERAN AND CIVILIAN PHYSICIANS

(Supplementary to listings published in the Journal Dec. 8, 1945, Vol. 129, pp. 1046-1059 and March 2, 1946, Vol. 130, pp. 602-603)

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
ANATOMY			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit	Anatomy	Begins April 8, 1946 Spring quarter	Arranged
BACTERIOLOGY			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit	Bacteriology	Begins April 8, 1946 Spring quarter	$ 50
CHEST DISEASES			
American College of Chest Physicians, 500 N. Dearborn St., Chicago At: Michael Reese Hospital	Postgraduate Course in Diseases of the Chest	April 1-6, 1946	50
University of Illinois College of Medicine, 1853 W. Polk St., Chicago	Course in Broncho-Esophagology	June 3-15, 1946, 2 weeks	100
Columbia University College of Physicians and Surgeons, New York At: Bellevue Hospital	Chest Diseases	Oct. 7, 1946, 2 weeks	50
Trudeau School of Tuberculosis, Saranac Lake, N. Y.	Tuberculosis	Sept. 9, 1946, 4 weeks	100
CARDIOVASCULAR DISEASES			
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston			
At: Peter Bent Brigham Hospital	Cardiology	July 1-31, 1946, 1 month	150
At: Beth Israel Hospital	Cardiology	April 1-July 31, 1946, 3 months	300
DERMATOLOGY AND SYPHILOLOGY			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit At: Social Hygiene Clinic and Receiving Hospital	Dermatology and Syphilology	Begins April 8, 1946, 4 weeks	Arranged
Columbia University Faculty of Medicine, 630 W. 168th St., New York	Dermatology	2 to 6 months, 1st day of any month	per month 55
GASTROENTEROLOGY			
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans	Gastrointestinal Diseases	March 25-30, 1946, 5 days	Not stated
MEDICINE, GENERAL			
University of Southern California School of Medicine, 3551 University Ave., Los Angeles At: Los Angeles County Hospital	Review of Internal Medicine	Every 3 months beginning Dec. 17, 1945, 3 months	185
American College of Physicians, 4200 Pine St., Philadelphia At: University of California, San Francisco	Course in Internal Medicine	June 17-28, 1946, 2 weeks	Not stated
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans	Infectious Diseases Neoplastic Diseases	April 29-May 4, 1946 May 6-11, 1946	Not stated Not stated
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston At: Massachusetts General Hospital	Internal Medicine	June 17-July 27, 1946, 6 weeks	200
Tufts Medical School Postgraduate Division, 20 Bennet St., Boston	Internal Medicine	1 month, arranged	50
Wayne University College of Medicine, 1516 St. Antoine St., Detroit At: Receiving Hospital	Internal Medicine	Begins April 8, 1946 Spring quarter	Arranged
Washington University School of Medicine, Euclid Ave. and Kingshighway, St. Louis	Continuation Courses for General Practitioners	Arranged	Arranged
Columbia University Faculty of Medicine, 630 W. 168th St., New York	Internal Medicine	April 1-June 29, 1946, 2 months	per month 55
University of Rochester School of Medicine, 260 Crittenden Blvd., Rochester, N. Y.	Postgraduate Refresher Course	April 1, 1946, 6 weeks	$33.33
Syracuse University College of Medicine, 766 Irving Ave., Syracuse, N. Y.	Refresher Course in General Medicine	Arranged	Not stated
University of Cincinnati College of Medicine, Eden and Bethesda Aves., Cincinnati	Refresher Course in Medicine	Tentatively set for July 15-Sept 15, 1946	Not stated
University of Oregon Medical School, Marquam Hill, Portland, Ore.	General Refresher Course	April 1-June 22, 1946, 12 weeks	75
University of Tennessee College of Medicine, 874 Union Ave., Memphis, Tenn.	Refresher Course in Medicine	Beginning of any month	120
Vanderbilt University School of Medicine, 21 Avenue South at Edgehill, Nashville, Tenn.	Medicine	1 to 3 months from April to October, 1946	3 months $35.56
University of Vermont College of Medicine, Pearl St., College Park, Burlington, Vt.	Course for General Practice Course in Internal Medicine	Arranged, 12 weeks Minimum 4 weeks, arranged	Not stated Not stated
NEUROLOGY AND PSYCHIATRY			
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans	Nervous System Diseases	April 15-20, 1946	Not stated
New York University College of Medicine, 477 First Ave., New York	Full Time Refresher Course in Neurology and Psychiatry	September 17, 1946, 8 weeks	250
Columbia University Faculty of Medicine, 630 W. 168th St., New York	Neurology and Psychiatry	2 to 6 months 1st day of any month	per month 55

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
OBSTETRICS AND GYNECOLOGY			
Louisiana State University School of Medicine, 1542 Tulane Ave., New Orleans	Obstetrics	May 13-June 1, 1946, 3 weeks	75
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans	Obstetrics and Gynecology	May 13-18, 1946	Not stated
University of Maryland School of Medicine, Lombard and Greene Sts., Baltimore	Review of Obstetrics and Gynecology	Arranged, 12 weeks	150
	Review of Gynecology, Oncology and Female Urology	Arranged, 10 weeks	125
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston At: Providence Lying-in Hospital	Obstetrics and Pediatrics	Arranged, 1 month	100
Columbia University Faculty of Medicine, 630 W. 168th St., New York	Obstetrics and Gynecology	1st day of any month 2 to 6 months	per month 55
OPHTHALMOLOGY			
The Children's Memorial Hospital, 707 Fullerton Ave., Chicago	PG Conference in Neuromuscular Anomalies of the Eye	Scheduled May 12-17; changed to May 5-10, 1946	50
Wayne University College of Medicine, 1516 St. Antoine St., Detroit	Basic Ophthalmology	Begins April 8, 1946 Spring quarter	100
OTORHINOLARYNGOLOGY			
University of Illinois College of Medicine, 1853 W. Polk St., Chicago	Refresher Course in Otolaryngology for Specialists	May 13-18, 1946, 1 week	50
Columbia University Faculty of Medicine, 630 W. 168th St., New York	Otolaryngology	1st day of any month 2 to 6 months	per month 55
University of Oregon Medical School, Marquam Hill, Portland, Ore.	Ophthalmology and Otolaryngology	April 15-20, 1946, 1 week	50
PATHOLOGY			
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans	Gynecological and Obstetrical Pathology	May 20-June 1, 1946	Not stated
Wayne University College of Medicine, 1516 St. Antoine St., Detroit	Pathology	Begins April 8, 1946 Spring quarter	Arranged
Columbia University Faculty of Medicine, 630 W. 168th St., New York	Surgical Pathology	1st day of any month 2 to 6 months	per month 55
PEDIATRICS			
Michael Reese Hospital, 29th St. and Ellis Ave., Chicago	Pediatrics	May 1-29, 1946	100
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston	Pediatrics	June 17-29, 1946	75
Columbia University Faculty of Medicine, 630 W. 168th St., New York	Pediatrics	1st day of any month 2 to 6 months	per month 55
Vanderbilt University School of Medicine, 21 Avenue South at Edgehill, Nashville, Tenn.	Pediatrics	1 to 3 months from April to October, 1946	3 months 166.66
PHARMACOLOGY			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit At: Grace Hospital	Pharmacology	Begins April 8, 1946 Spring quater	Arranged
PHYSIOLOGICAL CHEMISTRY			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit	Physiological Chemistry	Begins April 8, 1946 Spring quarter	Arranged
PHYSIOLOGY			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit	Physiology	Begins April 8, 1946 Spring quarter	Arranged
PROCTOLOGY			
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston	Diseases of the Colon and Rectum	April 15-20, 1946	50
Wayne University College of Medicine, 1516 St. Antoine St., Detroit At: Receiving Hospital	Proctology	April 7, 1946, 4 weeks	30
PUBLIC HEALTH			
Johns Hopkins University School of Hygiene and Public Health, 615 N. Wolfe, Baltimore	Public Health	Oct. 1, 1946, 8 months	Not stated
Vanderbilt University School of Medicine, 21 Avenue South at Edgehill, Nashville, Tenn.	Public Health and Preventive Medicine	1 to 3 months from April to October, 1946	3 months 166.66
RADIOLOGY			
Vanderbilt University School of Medicine, 21 Avenue South at Edgehill, Nashville, Tenn.	X-Ray	1 to 3 months from April to October, 1946	3 months 166.66
SURGERY			
Louisiana State University School of Medicine, 1542 Tulane Ave., New Orleans	General Surgery	April 22-May 11, 1946	75
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans	Traumatology	May 20-25, 1946	Not stated
University of Maryland School of Medicine, Lombard and Green Sts., Baltimore	Surgical Anatomy	Arranged, 15, weeks	150
The Lahey Clinic, 605 Commonwealth Ave., Boston	Postgraduate Course in Surgery	May 14-16, 1946	25 Free to Members of Armed Forces
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston At: Pratt Diagnostic Hospital	Surgery	Arranged, 1 month	50
Wayne University College of Medicine, 1516 St. Antoine St., Detroit	Seminar in Surgery	Begins April 8, 1946 Spring quarter	10
Vanderbilt University School of Medicine, 21 Avenue South at Edgehill, Nashville, Tenn.	Surgery	1 to 3 months from April to October, 1946	3 months 166.66
University of Vermont College of Medicine, Pearl St., College Park, Burlington, Vt.	Course in Surgery	Arranged, minimum 4 weeks	Not stated
UROLOGY			
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans	Urinary Disease	April 8-13, 1946	Not stated
Columbia University Faculty of Medicine, 630 W. 168th St., New York	Urology	1st of any month, 2 to 6 months	per month 55

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Hospitals for Profit: Hospital Liable for Burns Caused by Patient Spilling Hot Water on Herself.—The plaintiff sued for injuries alleged to have resulted from the negligence of certain employees of the defendant hospital during the time she was a patient therein. The jury found for the plaintiff, but the trial court entered judgment for the defendant notwithstanding such verdict. From such judgment the plaintiff appealed to the Supreme Court of California.

It appeared from the evidence that the plaintiff, a woman about 60 years old, on recommendation of her physician entered the defendant hospital to have her uterus removed. The operation, which took about two hours and severely taxed the plaintiff's strength, was performed on a Saturday morning. At noon on Monday a nurse took a pot of hot water, a cup and saucer, a spoon and a tea bag into the plaintiff's room and placed them on a low table beside the bed. The plaintiff was drowsy and suffering from pain, had a tube through her nose into her stomach and had not yet recovered from the effects of 1/6 grain of morphine administered about 2:50 that morning and 1/3 grain of pantopon, an opium derivative, administered about 10 that morning. She said she recalled seeing some one in the room and that the person said something, but she didn't know what was said and made no reply that she remembered. A few minutes later she felt a terrific heat on her arm and chest. She screamed and nurses came in and found she had been burned. The head nurse applied some salve and bandaged the area. The nurse who took the tray into the room testified that she had not advised the plaintiff that the water was hot but had told her that she should have a nurse help her. No drinking tube was furnished. The plaintiff had had no oral nourishment since the operation except a cup of tea on the previous day.

The defendant first contended that there was no evidence of negligence on its part. It argued that the evidence furnished by doctors, nurses and the hospital chart all showed that the plaintiff was in good condition prior to the accident, that she was exceptionally alert mentally and that the drugs administered were for pain alone and would not cause mental sluggishness or drowsiness. The plaintiff's physician testified, however, that morphine usually does produce some drowsiness, more in some persons than in others, and that a person would continue to feel the effects of the drugs administered to plaintiff for about four hours. A private hospital, said the Supreme Court, owes its patients the duty of protection and must exercise such reasonable care toward a patient as his condition may require. A hospital is liable for want of ordinary care, whether from incompetency of a nurse or failure in duty by a fully qualified nurse. The duty of care extends to safeguarding the patient from self-inflicted injuries due to mental incapacity, but no one is required to guard against, or take measures to avert, that which a reasonable person under the circumstances would not anticipate as likely to happen. In the light of that standard, said the court, there was sufficient evidence from which the jury could have found that the defendant had been negligent. It could have found that the plaintiff was far from alert mentally—that her comprehension, awareness and ability to function were subnormal. It could also have found that the hospital should have been aware of that condition, since it assumed the duty of properly caring for its patients and of taking appropriate precautions. In her weakened condition and confused state of mind, said the court, it was not at all improbable that the plaintiff in one manner or another would spill the hot water on herself. She may have assumed, as a person of ordinary prudence, in a half-conscious fashion, that it was safe to attempt to consume the tea, not realizing the danger incident thereto or the extent of her weakness. According to the defendant's evidence the plaintiff had had no oral nourishment since the operation except tea on the day previous. The jury could have inferred that she would thus have a craving for the tea and might underestimate her strength and ability to handle the hot water. The defendant was under a duty to observe and know the condition of its patients. The court therefore concluded that the evidence warranted the jury in finding for the plaintiff and that there was no contributory negligence on her part.

The defendant also contended that if any one was liable it was the plaintiff's physician who gave the order that the plaintiff be served tea, knowing the customary manner in which it would be, and was, served. If the duty of care resting on the hospital embraced the serving of the tea, said the Supreme Court, it cannot escape responsibility for the performance of that duty by attempting to shift it to the doctor. Even if the doctor ordered the tea to be served in the customary manner, and that manner was negligent, the defendant would be liable in following such instruction where a duty of care toward the patient rested on it. The defendant was bound to supply proper attendance and care to plaintiff, and that duty extended to furnishing nourishment. It cannot be said that, because the doctor ordered tea to be served plaintiff, he was making the server of the tea his servant and employee to the exclusion of the defendant hospital as the employer. The hospital still had direction and control over its employees and was responsible for the care to be observed by them. Accordingly the judgment for the defendant was reversed and the trial court ordered to enter judgment for the plaintiff on the verdict.—*Rice v. California Lutheran Hospital et al., 163 P. (2d) 860 (Calif., 1945).*

Medical Practice Acts: Unlawful Sale of Morphine Sulfate Held to Be Felony Justifying Revocation of License to Practice Medicine.—This is an action to review a determination of the Board of Regents of the University of the State of New York which revoked petitioner's license to practice medicine because of conviction of a felony. From an order confirming the revocation he appealed to the Supreme Court, appellate division, third department, New York.

Petitioner pleaded guilty in the United States district court to the crime of "unlawful sales of morphine sulfate," a violation of the Harrison narcotic act. There were two counts to the indictment, he was sentenced to one year and one day on each count, sentence was suspended and he was placed on probation for two years. Shortly thereafter the State Department of Education advised him that his license to practice medicine was subject to revocation because the offense to which he pleaded guilty was a felony. Petitioner contended that the offense was a misdemeanor, not a felony, and be petitioned the district court to amend the judgment of conviction to specify the exact unlawful acts. The petition was granted and the following statement was attached to the judgment:

> The sales charged in the indictment in counts 1 & 2 consisted of the following as a matter of fact: that on two different occasions defendant, a licensed physician, did, for a consideration, issue an order or prescription for morphine sulfate not in the regular course of his practice but to an addict for a prohibited use, although the prescription was filled by a druggist who acted in good faith without knowledge that the prescription was unlawfully used.

The designation of the offense as "unlawful sale of morphine sulfate" was not changed. Respondent still insisted that the petitioner was guilty of a felony and the order of revocation followed.

Section 1264 of the Education Law provides:

> 1. Whenever any practitioner of medicine shall be convicted of a felony . . . the registration of the person so convicted may be annulled and his license revoked by the department. . . .

Section 1251 provides:

> . . . The conviction of felony shall be the conviction of any offense which if committed within the state of New York could constitute a felony under the laws thereof. . . .

Section 1751 of the Penal Law provides:

> . . . who shall peddle, sell, barter or exchange any narcotic drug, as defined in section four hundred twenty-one of the public health law, in violation of article twenty-two of such law, shall be guilty of a felony. . . .

The court said that the offense to which the petitioner pleaded guilty was a felony under the laws of the national and state governments. Petitioner's crime was completed when he unlawfully issued the prescription. The issuance of the prescription, concluded the court, constitutes a sale within the meaning of the statutes. Accordingly the determination of the Board of Regents was affirmed.—*Tonis v. Board of Regents of University of State of New York, 58 N. Y. S. (2d) 766 (N. Y., 1945).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

145:1-122 (Nov.) 1945

Effect of cH on Humoral Stimulation of Striated Muscle and Its Application to Chemical Control of Breathing. J. C. Finerty and R. Gesell.—p. 1.

Beneficial Effects of Yeast on Cardiac Failure of Hyperthyroid Rats. B. H. Ersboff and D. Hershberg.—p. 16.

Growth and Hemoglobin Production in Dogs on Purified Rations. W. R. Ruegamer, L. Michaud, C. A. Elvehjem and E. B. Hart.—p. 23.

Gonadotropic Activity of Equine Gonadotropin in Combination with Zinc. J. H. Leathem.—p. 28.

Liver Water and Electrolytes in Hemorrhagic Shock. D. C. Darrow and F. L. Engel.—p. 32.

Production of Arterial Hypertension by Chronic Renal Artery Nerve Stimulation. F. J. Kottke, W. G. Kubicek and M. B. Visscher.—p. 38.

Functional Changes in Nerve and Muscle After Partial Denervation. H. M. Hines, W. H. Wehrmacher and J. D. Thomson.—p. 48.

Blood Regeneration in Rats Deficient in Biotin, Thiamine or Riboflavin. A. Kornberg, H. Tabor and W. H. Sebrell.—p. 54.

Effect of Calcium Concentration on Prothrombin Time. L. B. Jaques and A. P. Dunlop.—p. 67.

Effect of Thiouracil on Respiration of Bone Marrow and Leukocytes in Vitro. C. O. Warren.—p. 71.

Distribution of Phosphorus Compounds in Gastrocnemius Muscle as Influenced by Aging Process. S. M. Horvach.—p. 77.

Biologic Energy Transformations During Shock as Shown by Blood Chemistry. W. H. McShan, V. R. Potter, A. Goldman, E. G. Shipley and R. K. Meyer.—p. 93.

Comparison of Nutritive Values of Dextrose and Corn Syrups and of Effects Produced on Their Utilization by Thiamine. C. P. Richter.—p. 107.

Note on Effect of Caffeine on Ammonia and Urea Excretion in Rabbits. F. Bernheim and Mary L. C. Bernheim.—p. 115.

Effect of Various Steroid Hormones on "Alkaline" and "Acid" Phosphatases of Kidney of Mouse. C. D. Kochakian.—p. 118.

American Review of Tuberculosis, New York

52:449-564 (Dec.) 1945

*Silicosis: Clinical Study. H. Dayman.—p. 449.

Poncet's Disease: Clinical Observations on Inflammatory and Degenerative Joint Reactions in Tuberculosis. F. Seligson.—p. 463.

Treatment of Pulmonary Tuberculosis with Diasone. K. B. Olson, J. F. Thompson and C. J. Zintheo Jr.—p. 474.

*Strict Bed Rest in Pulmonary Tuberculosis: Appraisal. H. A. Bray.—p. 483.

Tuberculosis in Tropical Naval Hospital. E. Bogen and G. H. Strickland.—p. 490.

End Results of Artificial Pneumothorax: Review of 140 Cases Two Years After Reexpansion. I. V. Allen and C. W. Kelly.—p. 495.

Suction Cabinet for Use in Cavity Aspiration (Monaldi). W. Woodruff.—p. 502.

Anatomic Studies on Human Tuberculosis: XX. Disseminated Calcified Small Nodular Hematogenous Pulmonary Tubercles Incidentally Discovered. K. Terplan.—p. 505.

Comparison of Tuberculin Patch Test and Collodion Tuberculin Test. B. Finger, J. J. Sottilaro and H. Vollmer.—p. 521.

Modified Tuberculin Patch Test. T. C. Grubb.—p. 526.

Clorox Digestion: Comparison of Clorox Digestion and Three Other Methods for Finding Acid Fast Organisms in Sputum. G. M. Cameron and Ruth Castles.—p. 530.

Medicine as Practiced During 1840's: Comparison. W. D. Postell.—p. 534.

Silicosis.—Dayman reports observations on 116 patients with silicosis, 33 of whom came to necropsy. Thirty of the 116 patients who did not present evidence of clinical tuberculosis are divided into two groups: those with simple nodular silicosis (15 cases) and those with simple conglomerate silicosis (15 cases). The majority of the 15 patients with simple nodular silicosis were free of symptoms. A few noted slight dyspnea on exercise. The diagnosis was established solely on a history of prolonged exposure to silica dust and the minute, widely distributed shadows in the roentgenogram. The patients with simple conglomerate silicosis exhibited symptoms and signs of pulmonary emphysema. Dyspnea was often the sole outstanding complaint. In 7 of the 15 cases massive shadows were situated symmetrically in either lung field at the hilar level, while in 8 cases the principal shadows were somewhat smaller, more numerous and irregularly distributed. In 12 there were additional minute disseminated shadows compatible with silicotic nodulation. In 77 of the 116 patients with silicosis, complicating tuberculosis existed. The symptoms were predominantly those of the tuberculous disease. The constitutional reaction is not so pronounced when tuberculosis complicates silicosis as when tuberculosis alone is present. The chest roentgenogram presented widespread minute shadows similar to those observed in simple nodular silicosis together with larger mottled shadows, the latter usually being due to the intimately combined lesions of silicosis and tuberculosis. The presence of silicosis evidently predisposes the patient to progressive tuberculosis. Sixty-six of the 77 died.

Bed Rest in Pulmonary Tuberculosis.—Bray believes that rest in bed is essential in the treatment of pulmonary tuberculosis when manifest symptoms are present. The published results achieved by strict bed rest are few in number and not convincing. A series of 67 ambulant patients was observed who presented an "early" lesion. In this series of 67 ambulant patients the results were favorable in 57 instances, questionable in 2 and unfavorable in the remaining 8. The results are comparable to those obtained by the use of strict bed rest. An additional study was made of 360 patients with incipient tuberculous disease admitted to Ray Brook during the years 1939 to 1942 inclusive; 97 patients in this group had received four months of strict bed rest before coming to Ray Brook. The remaining 263 were ambulant previous to and during their residence at the sanatorium except in a relatively few instances in which an exacerbation of the disease occurred subsequent to their admission. The results of treatment in these two groups of patients who received approximately the same period of treatment at Ray Brook were for all practical purposes identical, indicating that the initial months of treatment by strict bed rest did not appreciably alter the course of the disease.

Anesthesiology, New York

6:561-672 (Nov.) 1945

*Comparison of Amphetamine Sulfate with Other Stimulants of Central Nervous System in Morphine Respiratory Depression. C. A. Handley and D. L. Ensberg.—p. 561.

*Hypobaric Pontocaine: New Technic in Spinal Anesthesia. P. C. Lund and J. D. Cameron.—p. 565.

Utility of Apomorphine in Clinical Anesthesia. E. A. Rovenstine and S. G. Hershey.—p. 574.

Anesthesia in Maxillofacial Surgical Unit with British Liberation Army. H. L. Thornton and S. Rowbotham.—p. 580.

Ether-Air Anesthesia: Technic. M. Saklad, Priscilla Sellman and E. Saklad.—p. 597.

Bilateral Paralysis of Abducens and Hypoglossal Nerves Following Spinal Anesthesia: Case Report. J. L. Milowsky and R. R. Betancourt.—p. 600.

Acetaldehyde, a Volatile Anesthetic and Sympathetic Stimulant. T. Koppanyi.—p. 603.

Regional Nerve Block Anesthesia. J. R. Bone.—p. 612.

Amphetamine Sulfate for Respiratory Depression Caused by Morphine.—Handley and Ensberg compare the effectiveness of amphetamine with ephedrine, metrazol, caffeine and nikethamide. Their studies on 14 human subjects indicate that amphetamine sulfate is the most effective drug of the five stimulants studied in antagonizing morphine respiratory depression. Amphetamine is also more prompt in acting than the other four agents. The average percentage increases in minute volume above depressed levels were amphetamine 102, nikethamide 37, ephedrine 30, metrazol 21 and caffeine 17.

Hypobaric Pontocaine in Spinal Anesthesia.—Lund and Cameron point out that hypobaric solution of pontocaine has several disadvantages, chief among them being that the head and/or shoulders must be elevated at least fifteen to twenty minutes until the drug is fixed by the nerve tissues. They describe a technic which they have developed using hypobaric pontocaine in a 0.1 per cent solution. As it has a specific gravity of 1.001, while that of nupercaine is 1.003 and that of the spinal fluid approximately 1.007, the solution is readily con-

trolled by gravity and the low concentration should add a wide margin of safety. Hypobaric pontocaine can be used to advantage in all cases suitable for spinal anesthesia which require under two to two and one-half hours of operating time. There were no severe postoperative sequelae in 175 cases. The advantages of the method include the ability to maintain the Trendelenburg or lateral Trendelenburg position throughout and thus aid in the prevention of shock and cerebral anoxia. The smaller dosage insures minimal interference with vital processes, favors minimum depression, accounts for decreased postoperative discomfort and sequelae and decreases the incidence of reactions and toxicity. The onset of anesthesia is probably more rapid than with other spinal anesthetic agents.

Journal of Immunology, Baltimore

51:307-374 (Nov.) 1945

Food Poisoning Staphylococci and Order of Their Resistance to Penicillin: I. Inhibition of Coagulase Production. H. C. Mason.—p. 307.
Production of Clostridium Perfringens Alpha Toxin. M. A. Logan, A. A. Tytell, I. S. Danielson and Alice M. Griner.—p. 317.
Anaphylactic Properties of Photo-Oxidized Rabbit Antisera (vs. Sheep Erythrocytes and Pneumococci) and Horse Antiserum (vs. Diphtherial Toxin) Containing 'Univalent' Antibodies. A. Tyler.—p. 329.
Protective Value of 'Univalent' Antibodies Produced by Photo-Oxidation of Antipneumococcal Rabbit Serum and Antidiphtheric Horse Serum. A. Tyler and S. M. Swingle.—p. 339.
Determination of Meningococcic Antibodies by Centrifuge Agglutination Test. Ruth L. Mayer and H. F. Dowling.—p. 349.
Role of Ether Anesthesia in Production of Influenza Virus Pneumonia in Mice. I. N. Dubin.—p. 355.
Electrophoretic Study of Anti-Influenzal Horse Serum. R. W. G. Wyckoff and M. Rhian.—p. 359.
Serologic Studies in Typhus Vaccinated Individuals: I. Effect of Stimulating Dose of Typhus Vaccine on Weil-Felix and Complement Fixing Antibodies. C. J. Zarafonetis.—p. 365.

Journal of Lab. and Clinical Medicine, St. Louis

30:983-1100 (Dec.) 1945

*Comparison of Results Obtained with Hanger Cephalin Cholesterol Flocculation Test and Maclagan Thymol Turbidity Test in Patients with Liver Disease. C. J. Watson and E. M. Rappaport, with technical assistance of Violet Hawkinson and Margaret Giebenhain.—p. 983.
Antigenic Properties of Various Lipoids From Beef Heart. H. Hecht.—p. 992.
Study of Relative Sensitivity of Different Lots of Antigen Employed in Serologic Tests for Syphilis. E. L. Webb, T. F. Sellers and Virginia Perkins.—p. 1000.
Theory of Colloidal Gold Reaction: I. Reactions Between Gold Sol and Isolated Protein Fractions. C. Lange.—p. 1006.
Experimental Production of Pulmonary Embolism by Use of Venous Catheter. T. D. Kinney, Florence W. Haynes and L. Dexter.—p. 1013.
Penicillin Combined with Fever Therapy: Preliminary Report of 20 Cases of Early Syphilis. R. M. Craig, G. X. Schwemlein and H. W. Kendell.—p. 1016.
Penicillin Therapy in Human Bartonellosis (Carrion's Disease). C. Merino.—p. 1021.
Standardized Back Burn Procedure for White Rat Suitable for Study of Effects of Therapeutic and Toxic Agents on Long Term Survival. M. D. McCarthy, with technical assistance of Jane R. Lewis and Jean Conver.—p. 1027.
Hydrolyzed Casein (Capaïn) as Plasma Substitute. R. Brinkman, L. D. Eerland, L. A. G. Hissink and J. J. M. Vegter.—p. 1034.
*Studies on Hypertension: V. Effect of High Spinal Anesthesia on Blood Pressure of Patients with Hypertension and Far Advanced Renal Disease—Its Possible Relationship to Pathogenesis of Hypertension. R. Gregory and W. C. Levin.—p. 1037.
Effect of Intravenous Typhoid Vaccine on Intravenous Glucose Tolerance Test. J. M. Looney.—p. 1043.
Diagnosis of Enterobiasis: Comparative Study of Graham and Hall Technic in Diagnosis of Enterobiasis. L. Mazzotti and Maria T. Osorio.—p. 1046.
Urinary Excretion of Anti-Pernicious Anemia Factor. R. D. Lange, R. H. Ramsey and C. V. Moore.—p. 1048.
*Activity of Synthetic Lactobacillus Casei Factor ("Folic Acid") as Anti-Pernicious Anemia Substance: I. Observations on 4 Patients, 2 with Addisonian Pernicious Anemia, 1 with Nontropical Sprue and 1 with Pernicious Anemia of Pregnancy. C. V. Moore, Olga S. Bierbaum, A. D. Welch and L. D. Wright.—p. 1056.

Hanger Cephalin Cholesterol and Maclagan Thymol Turbidity Tests.—Watson and Rappaport compared the Hanger cephalin cholesterol flocculation test and the Maclagan thymol turbidity test on 252 blood serums from 145 persons. Thirty-one of these subjects were believed to be normal, while 60 (154 tests) had infectious hepatitis. The underlying mechanism of the 2 tests is not identical and the Maclagan test cannot be used interchangeably with the Hanger test or as a complete substitute for it. Because of its simplicity, stability of reagents and rapidity, the Maclagan test can be used to advantage for serial observations when the diagnosis has been established, as for instance in infectious hepatitis. The Maclagan test can also be used to advantage in the differential diagnosis of jaundice or liver disease as long as its limitations are recognized. The present study indicates that a strongly positive test is just as indicative of liver injury or disease as is the Hanger test and that it may prove to be more uniformly negative in cases of jaundice due to biliary tract cancer and in cases of hepatic cancer with or without jaundice. Conversely it appears that the Hanger test is more often positive in cases of cirrhosis or subacute atrophy.

Effect of High Spinal Anesthesia on Blood Pressure of Patients with Hypertension.—Gregory and Levin found that decreases in blood pressure obtained during spinal anesthesia in patients with essential hypertension and uremia may be substantial and as great as drops in blood pressure similarly produced in patients with essential hypertension and normal renal function. The authors believe that the great fall in blood pressure induced by high spinal anesthesia indicates that the elevation of blood pressure is due to increased vasomotor tonus even in patients with extreme irreversible arteriolar disease as shown by clinical and chemical evidence of uremia. These results are contradictory to the thesis that the fall of blood pressure in hypertension produced by functional or anatomic interruption of the sympathetic nervous system is due to improvement in renal blood flow.

Synthetic Lactobacillus Casei Factor as Anti-Pernicious Anemia Substance.—Clinical and hematologic remissions were induced by Moore and his associates in 2 patients with addisonian pernicious anemia by the daily oral administration for ten days of 30 mg. and of 100 mg. of synthetic Lactobacillus casei factor ("folic acid"). One patient with macrocytic anemia of nontropical sprue and 1 patient with pernicious anemia of pregnancy responded in a similar manner when given daily 20 mg. of the preparation intravenously. These results indicate that the L. casei factor possesses anti-pernicious anemia factor activity. It is pointed out, however, that the material must be proved effective parenterally in much smaller doses and over a much longer period before it can be accepted as being closely similar in action to (or identical with) the effective principle present in liver extracts.

Journal-Lancet, Minneapolis

65:415-442 (Dec.) 1945

Health Service Objective. R. I. Canuteson.—p. 419.
College Health Service to Civilians and Military Students. M. Murphy and W. Forsythe.—p. 421.
Hypofunction of Lacrimal Gland and the Sjögren Syndrome. A. de Roetth.—p. 423.
Diagnosis and Postsanatorium Care in Pulmonary Tuberculosis. W. L. Meyer.—p. 426.
Prevention of Crystallization and Stone Formation During Constant Urinary Drainage. H. I. Suby.—p. 428.

Journal of Nutrition, Philadelphia

30:301-388 (Nov.) 1945

Nutritional Effects on Gastric Mucosa of Rat: I. Lesions of Antrum. T. F. Zucker, B. N. Berg and Lois M. Zucker.—p. 301.
Id.: II. Lesions of Fundus and Rumen. T. F. Zucker, B. N. Berg and Lois M. Zucker.—p. 319.
Effects of Dietary Supply of Carbohydrate on Response of Human Respiratory Quotient After Glucose Administration. H. F. Root and T. M. Carpenter.—p. 333.
Bodily Storage of Vitamin A in Relation to Diet and Age, Studied by Assay Method of Single Feedings. H. L. Campbell, Madeline Udiljak, Helen Yarmolinsky and H. C. Sherman.—p. 343.
Bodily Storage of Vitamin A in Relation to Diet and Age Studied by Means of Antimony Trichloride Reaction Using a Photoelectric Colorimeter. Anne B. Caldwell, Grace MacLeod and H. C. Sherman.—p. 349.
Availability of Ascorbic Acid in Papayas and Guavas. Eva R. Hartzler.—p. 355.
Nutritional Studies with the Duck: II. Pyridoxine Deficiency. D. M. Hegsted and M. N. Rao.—p. 367.
Effect of Genetic Variation in Fowl on Thiamine Content of Egg. N. S. Scrimshaw, F. B. Hutt and Mary W. Scrimshaw.—p. 375.
Physiologic Availability to Rat of Crude Carotene in Vegetables. B. L. Oser and D. Melnick.—p. 385.

Journal of Urology, Baltimore

54:501-580 (Dec.) 1945

Study of Experimental Urinary Calculi: I. Methods for Producing and Preventing Calculous Formation in Bladder and Urethra of Albino Rats. J. G. Wilson, J. A. Benjamin and Alice D. Leahy.—p. 503.
*Study of Experimental Urinary Calculi: II. Quantitative Microchemical, Spectrographic and Citric Acid Analyses of Albino Rat Calculi with Preliminary Apatite Report. J. A. Benjamin, J. G. Wilson and Alice D. Leahy.—p. 516.
Renal Calculi Associated with Hyperparathyroidism. E. N. Cook and F. R. Keating Jr.—p. 525.
Significance of Spontaneous Hematuria Associated with Hypertrophy of Prostate. J. A. Lazarus.—p. 531.
Bilateral Orchiectomy in Advanced or Recurring Carcinoma of Bladder with Severe Subjective Symptoms: Preliminary Report. C. H. deT. Shivers.—p. 539.
*Treatment of Orchitis of Mumps. R. A. Burhans.—p. 547.
Repair of Complete Tear of Membranous Urethra: Case Report and Suggested New Technic for Operation. W. F. Leadbetter.—p. 549.
Reiter's Syndrome. J. C. Sargent.—p. 556.
Technic for Assay Hyaluronidase in Human Semen and Its Correlation with Sperm Concentration. N. T. Werthessen, S. Berman, B. E. Greenberg and S. L. Gargill.—p. 565.
Transport of Spermatozoa in Female Reproductive Tract. B. E. Greenberg, N. T. Werthessen, S. Berman and S. L. Gargill.—p. 571.

Analyses of Calculi in Rats.—Benjamin and his associates employed microchemical, spectrographic and optical methods in the analysis of experimentally produced bladder and urethral calculi in rats. Magnesium ammonium phosphate hexahydrate was the principal constituent, although small amounts of calcium phosphate were generally found. The calculi contained very small amounts of citrate. Spectrographic studies confirmed the presence of magnesium and phosphate and indicated the occasional presence of small amounts of sodium, iron, aluminum and silicon. Study by optical and chemical methods suggested the presence of carbonate apatite.

Treatment of Orchitis of Mumps.—Burhans thinks that orchitis of mumps is a misnomer. In examining cases of this type in a naval hospital he found that they do not develop primarily an orchitis of mumps but an acute hydrocele around a testis which causes a strangulation of the testis, in contradistinction to a slow forming hydrocele. This acute process causes strangulation, acute inflammatory edema and ultimate fibrosis and atrophy of the testes. If a small scrotal incision is made during the acute orchitis, it is found that the fluid in the tunica vaginalis is under extreme pressure and has yellowish viscidity. If drainage is accomplished at this time, further therapeutic measures are not needed and the temperature curve simulates a crisis of pneumonia. In late cases the author recommends incision of the tunica vaginalis, tunica propria and tunica albuginea with drainage.

Minnesota Medicine, St. Paul

28:961-1054 (Dec.) 1945

Jaundice—Method of Deciding Where Surgical Treatment Should Supplement Medical Care. J. J. Fee and E. L. Tuohy.—p. 981.
Cystectomy for Carcinoma of Bladder. T. H. Sweetser.—p. 987.
More Recent Approaches to Allergy. W. R. Shannon.—p. 993.
Management of Occipitoposterior Positions. J. R. Manley.—p. 999.

Missouri State Medical Assn. Journal, St. Louis

42:749-820 (Dec.) 1945

Industrial Health: Recent Developments in Pneumonoconiosis. A. J. Lanza.—p. 765.
Tuberculosis in Industry. H. E. Hilleboe.—p. 769.
Occupational Dermatoses. L. Schwartz.—p. 771.
Pneumatic Rupture of Colon: Case Report. H. C. Lapp.—p. 776.
Environmental Control of Occupational Disease. J. J. Bloomfield.—p. 780.
General Program of Industrial Hygiene Services in Missouri. A. L. Koven and W. S. Johnson.—p. 784.
Industrial Health Activities in St. Louis as Carried on and Promoted by Industrial Hygiene Service, Health Division, Department of Public Welfare. R. M. Brown.—p. 788.
Medical Problems of Veterans Administration. P. R. Hawley.—p. 792.

43:1-76 (Jan.) 1946

Surgical Care of Operable Malignant Lesions of Stomach. C. J. Hunt and P. F. Hunt.—p. 21.
Chemotherapeutic and Surgical Treatment of Acute Osteomyelitis. J. A. Key.—p. 23.

New England Journal of Medicine, Boston

233:711-746 (Dec. 13) 1945

Occupational Dermatoses: Disability and Compensation. C. G. Lane.—p. 711.
Development of Anatomic Laws in States of New England. F. C. Waite.—p. 716.
Infectious Mononucleosis. J. Milne.—p. 727.
Hemoglobinemia and Hemoglobinurias. J. F. Ross.—p. 732.
Stone at Bifurcation of Common Hepatic Duct.—p. 738.
Tuberculosis of Tongue, Epiglottis, Larynx, Lungs, Testes, Epididymides, Prostate, Bladder and Left Kidney.—p. 740.

233:747-798 (Dec. 20) 1945

*Penicillin Aerosolization in Treatment of Serious Respiratory Infections: Preliminary Report. M. S. Segal and Claire MacIntyre Ryder.—p. 747.
Clinical and Laboratory Studies of 91 Workers with Apical Systolic Murmurs. I. N. Wolfson.—p. 757.
Serologic Types of Hemolytic Streptococci in Scarlet Fever in Massachusetts. G. E. Foley, W. L. Aycock and R. D. Cox.—p. 761.
Hemoglobinemia and Hemoglobinurias. J. F. Ross.—p. 766.
Acute Hemorrhagic Interstitial Pneumonia.—p. 789.
Glioblastoma Multiforme of Medulla.—p. 792.

Penicillin Aerosolization in Serious Respiratory Infections.—This report by Segal and Ryder is a preliminary study of the use of aerosolized penicillin solutions in the treatment of patients with pneumonia, bronchiectasis, lung abscess and infective bronchial asthma. Twenty-one patients were treated. The clinical course of 6 patients with infective bronchial asthma was not altered, although the penicillin susceptible organisms were eradicated. Clinical cures were obtained in 5 patients with pneumococcic pneumonia and in 1 patient with an acute pulmonary infarction and pneumonitis. Penicillin blood levels of 0.028 to 0.055 Oxford unit per cubic centimeter were obtained in 5 patients. Five patients with bronchiectasis were successfully treated, 2 patients before lobectomy and the other 3 entirely medically. Such therapy is believed to be more helpful than sulfonamides or penicillin parenterally in bronchiectasis. Four patients with lung abscess were treated with penicillin aerosol. One of them, with a fulminating putrid lung abscess, died on the fifth hospital day following operation. Another, with a chronic putrid lung abscess, was adequately prepared for lobectomy. The third patient, with a large, nonodoriferous, aerobic type of lung abscess, with a fluid level, was entirely cured after six weeks of therapy. The fourth patient, with multiple lung infarcts and a lung abscess, improved slowly but completely. Penicillin aerosolization has a definite value in the treatment of patients with serious respiratory disease.

Northwest Medicine, Seattle

44:299-414 (Dec.) 1945

*Toxoplasmic Encephalitis: Clinical Findings in 2 Patients From Pacific Northwest. R. S. Dow.—p. 382.
Melanoma of Small Intestine. B. N. Wade.—p. 388.
Typhus Fever. C. E. Littlehales.—p. 390.
Necessary Cooperation of All Physicians. W. D. Read.—p. 392.
Present and Future Prepayment Plans. C. A. Veasey Jr.—p. 394.
Medical Service Bureau an Answer to Socialized Medicine. J. P. Neal.—p. 297.

Toxoplasmic Encephalitis.—Dow presents the histories of 2 patients with toxoplasmic encephalitis. The first was a child aged 2 who exhibited all the clinical manifestations of toxoplasmic encephalitis, including (1) healed or inactive chorioretinitis, (2) reduced vision, (3) strabismus nystagmus and microphthalmos, (4) intracerebral calcification, (5) one convulsive seizure, (6) internal hydrocephalus from a block at the aqueduct of Sylvius, (7) retarded speech development and (8) mental deficiency. The case was complicated by the presence of a postoperative Staphylococcus aureus meningitis and wound infection. The serologic tests for toxoplasma had not been done, and attempts to infect laboratory animals with spinal fluid were unsuccessful. The second patient, a girl aged 5, exhibited many of the signs and symptoms of toxoplasmic encephalitis. Treatment with sulfapyridine was tried and continued for ten days, maintaining a blood level of 5 to 10 mg. per cent. She seemed much improved for three weeks, but then seizures recurred. This observation and the results obtained in laboratory animals make it desirable to continue the use of sulfonamides whenever a diagnosis of toxoplasmic encephalitis is made and when there

has not been extensive permanent cerebral damage. It is felt that the condition is more common than the reported cases would indicate and that a greater incidence will be found when knowledge of this disorder has become more generally available.

Public Health Reports, Washington, D. C.

60:1519-1550 (Dec. 21) 1945

Legislation on Hospital Surveys, Construction and Licensing Considered by State Legislatures in 1945. Mary M. Guerin.—p. 1519.

60:1551-1582 (Dec. 28) 1945

Notes on Compulsory Sickness Insurance Legislation in the States, 1939-1944. Adela Stucke.—p. 1551.

61:1-36 (Jan. 4) 1946

A Cycle of Morphine Addiction: Biologic and Psychologic Studies: Part I. Biologic Investigations. E. G. Williams and F. W. Oberst. —p. 1.

61:37-68 (Jan. 11) 1946

A Cycle of Morphine Addiction: Biologic and Psychologic Studies: Part II. Psychologic Investigations. R. R. Brown.—p. 37.
Release of Antigen from Certain Bacteria on Treatment with Ether. C. C. Shepard.—p. 54.

Quarterly J. of Studies on Alcohol, New Haven, Conn.

6:271-414 (Dec.) 1945

*Treatment of Experimental Liver Cirrhosis. J. V. Lowry, L. L. Ashburn and W. H. Sebrell Jr.—p. 271.
Alcohol as Preventive of Experimental Neuroses. J. H. Masserman and Mary G. Jacques, with assistance of Mary R. Nicholson.—p. 281.
Case Histories of Compulsive Drinkers. H. Wortis and L. R. Sillman. —p. 300.
Alcohol Problem and the Law: III. Beginnings of Alcoholic Beverage Control Laws in America. E. G. Baird.—p. 334.

Treatment of Experimental Liver Cirrhosis.—Lowry and his associates maintained rats on a cirrhosis producing diet for sixty-three to eighty-four days, and the status of the liver of each rat was determined at that time by biopsy. The rats were then treated by the daily administration of large amounts of choline chloride or by using a diet containing large amounts of casein. The gross and microscopic appearance of the liver after treatment was compared with the biopsy findings. During the period of treatment a striking improvement in the gross and microscopic appearance of the liver occurred. Although therapy did not have a recognizable effect on the fibrous tissue present, it apparently prevented further progression of the cirrhotic process and produced improvement in the microscopic appearance of the parenchyma.

Radiology, Syracuse, N. Y.

45:599-664 (Dec.) 1945

Teaching of Radiology. F. J. Hodges.—p. 559.
Clinical Significance of Deformity of Cecum in Amebiasis. R. Golden and P. Ducharme.—p. 565.
Roentgen Findings in Amebic Disease of Liver. F. Isaac.—p. 581.
Evaluation of Automatic Exposure Control Equipment in Photofluorography. R. H. Morgan and P. C. Hodges.—p. 588.
Unusual Case of Ewing's Sarcoma. P. C. Swenson and J. G. Teplick. —p. 594.
Roentgenologic Visualization of Fractured Temporal Styloid Process. S. E. Sinberg and M. S. Burman.—p. 599.
Lipiodol Intravasation During Uterosalpingography with Pulmonary Complications. D. Eisen and J. Goldstein.—p. 603.
Bone Rarefaction After Skull Injuries. J. Arendt.—p. 608.

Lipiodol Intravasation During Uterosalpingography.—Eisen and Goldstein recommend certain measures which prevent intravasation or limit its extent. Injection for uterosalpingography should not be done earlier than six to eight days or later than ten days after completion of menstruation. The optimum period would seem to be eight to ten days after the menstrual period. It should not be performed in less than ten days after any operation on the uterus, in order to permit complete healing. The position of the uterus should be determined by the use of a sound. When the cannula is inserted it should be held, if necessary, at an angle that is calculated to make it parallel to the cervical canal, so that the tip of the cannula is not likely to be in contact with the endometrium. Williams recommends that the injection be done under fluoroscopic control both for ascertaining the position of the uterus and for early recognition of any intravasation. It is best to keep the pressure as low as is commensurate with proper filling of the uterus. A top pressure of 180 to 200 mm. of mercury is safe and satisfactory in practically all cases. The amount of lipiodol injected should be no more than is necessary to fill the uterus and tubes, with a slight spill. A satisfactory plan is to inject 4 to 6 cc. and maintain pressure while the film is taken and developed. If more lipiodol is required, it can be injected subsequently.

United States Naval Med. Bulletin, Washington, D. C.

45:1029-1238 (Dec.) 1945

*Louse Borne Relapsing Fever in Tunisia. F. G. Greaves, H. M. Gezon and W. F. Alston.—p. 1029.
Report on Cholera Studies in Calcutta: Value of Chemotherapy in Treatment of Cholera and Use of Blood Plasma in Cholera Collapse. Epidemiology Unit No. 50.—p. 1049.
Cardiovascular Disturbances in Tsutsugamushi Disease. M. Sokolow and L. H. Garland.—p. 1054.
Transportation of Japanese Prisoners of War: The Medical Department of an Attack Transport.—p. 1069.
Management of Injuries of Major Blood Vessels. G. Crile Jr.—p. 1076.
Perinephric Abscess: Report of 3 Cases Simulating Acute Appendicitis. J. B. Butts and M. E. Conley.—p. 1081.
Recurrent Indirect Hernia. L. L. Bean.—p. 1088.
Intrabronchial Instillation of Penicillin or Sulfonamide Solutions, with Bronchial Lavage, in Treatment of Severe Bronchiectasis. F. H. Moore and J. W. Thompson.—p. 1097.
Anaphylactoid (Sanarelli-Shwartzman) Reaction Following Therapeutic Antityphoid Injections, with Report of Fatal Case. J. Love and R. H. Driscoll.—p. 1104.
Roentgen Diagnosis of Deformities of Cardiac End of Stomach: Intrinsic and Extrinsic in Origin. M. H. Poppell and J. F. Roach.—p. 1111.
Occurrence of Psychoneurotic Symptoms on Various Services of Naval Hospital. N. Warner and Margaret W. Gallico.—p. 1119.
Disciplinary Problems Among Men with Combat Fatigue. J. D. Teicher. —p. 1125.
Bacteriology of War Wounds in Pacific Area. H. B. Neel and J. P. Cole.—p. 1127.
Endocrinologic Aspects of Recruiting. C. C. Kress.—p. 1131.
Prothrombin Liver Function Test. H. K. Russell.—p. 1140.

Louse Borne Relapsing Fever in Tunisia.—Greaves and his associates observed 40 patients in a special ward at the French Naval Hospital in Ferryville and considered partial data on an additional 80 cases in the village of El Haouid, 71 in the village of Hadjerine and 3,806 in the city of Tunis. They conclude that: 1. Penicillin is as effective as neoarsphenamine in the treatment of relapsing fever. It is more expensive and requires more work to administer than the arsenical, so that in the average case it offers little advantage. 2. Penicillin is probably the drug of choice in relapsing fever accompanied by jaundice. 3. The use of white mice or adult guinea pigs in experimentation on Spirocheta berbera, obtained directly from human blood, is not feasible. 4. One application of 10 per cent DDT powder, if thoroughly applied to a population, is nearly 100 per cent effective in stopping a louse borne epidemic of relapsing fever.

Virginia Medical Monthly, Richmond

72:503-548 (Dec.) 1945

Crystalluria in Southwest Pacific. H. C. Jones, P. L. Flynn and J. E. Glassberg.—p. 503.
Some Observations on Pending Medical Legislation and Medical Trends. W. A. Porter.—p. 507.
Nonmalignant, Segmental, Ulcerative Lesions of Bowel. C. M. Caravati. —p. 512.
Horace Wells and His Discovery of Anesthesia. A. M. Wash.—p. 516.
Treatment of Crushing Injuries of Extremities. S. Leigh Jr.—p. 519.
Traumatic Subcapsular Hematoma of Spleen: Case Report. L. R. O'Brian Jr.—p. 522.

War Medicine, Chicago

8:209-282 (Oct.) 1945

Methods of Accelerating Dark Adaptation and Improving Night Vision. K. K. Kekcheev.—p. 209.
Syndrome of Oxygen Poisoning in Cats. I. Gersh.—p. 221.
Development of Psychiatry in Army in World War II. W. C. Menninger.—p. 229.
Psychiatric Study of 100 Battle Veterans. J. G. Sheps and F. E. Coburn.—p. 235.
Psychiatry Aboard a Hospital Ship During Attack on Pearl Harbor. F. M. Harrison.—p. 238.
Psychiatric Disorders in Puerto Rican Troops. J. G. Kepecs.—p. 244.
Psychosis Following Administration of Quinacrine Hydrochloride for Malaria: Neuropsychiatric Study of a Case. J. C. Mergener. —p. 250.
Delayed Combat Reactions in Air Force Personnel. C. W. Miller Jr. —p. 253.
Measurement of Skin Resistance in Peripheral Nerve Injuries. I. Hyman and W. F. Beswick.—p. 258.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Rheumatic Diseases, London

5:1-28 (Sept.) 1945

Nature of Fibrositis: I. Myalgic Lesion and Its Secondary Effects: Reflex Theory. M. Kelly.—p. 1.
Study of Rheumatism in Group of Soldiers with Reference to Incidence of Trigger Points and Fibrositic Nodules. L. G. C. E. Pugh and T. A. Christie.—p. 8.
Observations on Treatment of Rheumatic Fever with Vitamin P. J. F. Rinehart.—p. 11.
Benign Type of Rheumatic Fever. W. L. Ackerman.—p. 14.
Rheumatism in Sweden. W. S. C. Copeman.—p. 17.

British Journal of Surgery, Bristol

33:101-200 (Oct.) 1945

Pharyngeal Diverticula. J. Morley.—p. 101.
Acrylic Resin for Closure of Skull Defects: Preliminary Report. J. M. Small and M. P. Graham.—p. 106.
Surgical Treatment of Traumatic Aneurysms. M. Paul.—p. 113.
Observations on Carcinoma of Prostate Treated with Estrogens as Demonstrated by Serial Biopsies. J. D. Fergusson and W. Pagel.—p. 122.
Histologic Study of Predegenerated Nerve Autograft. R. Barnes, P. Bacsich and G. M. Wyburn.—p. 130.
Obstructive Diaphragmatic Hernia Resulting from Old Gunshot Wound of Chest: Report of 3 Cases. W. A. Mackey and D. L. C. Bingham.—p. 135.
Pelvic Ectopic Kidney. G. Forbes.—p. 139.
Torsion of Great Omentum: Report of 4 Cases. W. Etherington-Wilson.—p. 142.
*Physiologic Gastrectomy: Operation of Ligature of Arteries of Stomach to Relieve Hyperacidity and to Prevent Recurrent Ulceration After Gastroenterostomy. T. H. Somervell.—p. 146.
Thoracoabdominal Wounds in War. G. Blackburn and A. L. d'Abreu.—p. 152.
Principles in Early Reconstructive Surgery of Severe Thermal Burns of Hands. B. Smith, C. Cornell and C. L. Neill.—p. 155.
Aid in Postoperative Management of Temporary Ileal Fistula After Lahey Right Hemicolectomy. S. Levy.—p. 160.
Experiences with Transthoracic Esophagectomy and Gastrectomy. G. H. Steele.—p. 162.
Penicillin Treatment of Acute Hematogenous Osteomyelitis. I. W. J. McAdam.—p. 167.
Status of Hormonal Bioassay in Malignant Disease of Testicle: Review of Literature. R. S. Francis.—p. 173.
Chronic Hypertrophic Ileocecal Tuberculosis and Its Relation to Regional Ileitis (Crohn's Disease). A. W. Taylor.—p. 178.

Physiologic Gastrectomy.—Somervell ligated most of the arterial supply of the stomach in 400 cases of gastroenterostomy for duodenal ulcer. The usual effect was an immediate and considerable drop in gastric acidity. Only 1 of the 400 patients in whom ligation had been done returned with gastrojejunal ulcer, whereas 7 of 300 gastrectomy patients returned with recurrent ulceration. In cases in which the operation of arterial ligation alone has been done without gastroenterostomy the early and late results are similar to those in which gastroenterostomy was combined with arterial ligation. It is evident that the reduction of acidity is caused by ligation of the arteries and not by the gastrojejunostomy. The author concludes that gastrovascular ligation is the operation of choice in cases of duodenal ulcer with severe hyperacidity and that it can be combined easily with gastroenterostomy without raising the mortality of the operation.

Transactions Roy. Soc. Trop. Med. & Hyg., London

39:177-264 (Dec.) 1945

*Investigation into Efficacy of Sulfadiazine in Treatment of Malaria. R. V. Coxon and W. Hayes.—p. 207.
Anemia Associated with Sickle Cell Trait in British West African Natives. R. W. Evans.—p. 207.
Studies on Weltmann Reaction in Malaria Cases. J. Kleeberg.—p. 221.
Contribution to Study of Malnutrition in Central Africa: Syndrome of Malignant Malnutrition. H. C. Trowell and E. M. K. Muwazi.—p. 229.
Growth of Protozoa in Tissue Culture: I. Plasmodium Gallinaceum, Exoerythrocytic Forms. F. Hawking.—p. 245.
Rapid Method for Detecting Sickle Cell Trait. G. Robinson.—p. 264.

Sulfadiazine in Treatment of Malaria.—Coxon and Hayes treated 20 cases of malaria, including both fresh and relapsing cases of benign tertian, fresh and relapsing cases of malignant tertian, and 1 case of quartan malaria, with sulfadiazine alone. Ten untreated controls were used for comparison. An initial dose of 5 Gm. of sulfadiazine was employed in the majority of cases. This was followed by 1 Gm. every four hours. Patients treated with sulfadiazine had their blood cleared of parasites after an average period of twelve days from the onset of the attack and eight days after the initiation of treatment. All of the 10 untreated controls had circulating blood parasites after the same interval of time. The latest day on which a treated patient became parasite free was the seventeenth day of the disease. While all the treated men had parasite free films after seventeen days, the controls untreated for the same period had parasites present. The treated patients, except 1 with a heavy infection with malignant tertian malaria, were afebrile by the thirteenth day of the attack, while 6 of the 10 controls continued to show a high temperature after the same interval. Sulfadiazine thus exerts an antimalarial effect on the temperature and in clearing the peripheral blood of parasites, but its action is slower than that of quinine and atabrine in controlling an attack of malaria. Of the 20 men treated with sulfadiazine 15 relapsed within one month from the cessation of treatment. This fact alone rules out its usefulness in the routine treatment of malaria. In addition there is the tendency of the drug to produce renal complications. The gametocytes of Plasmodium falciparum appeared to be unaffected by the drug.

Nordisk Medicin, Gothenburg

11:2305-2356 (Aug. 9) 1941. **Partial Index**

Hospitalstidende

Indications for Splenectomy in Gaucher's Splenomegaly. E. Meulengracht.—p. 2309.
Remarks on So-Called Ischiopubic Osteochondritis. P. N. B. Eliasen.—p. 2312.

Norsk magasin for lægevidenskapen

*Electrocardiographic Changes in Cor Pulmonale. K. Smedsrud.—p. 2325.
Features of Pathology in Deforming Spondylosis. O. Torgersen.—p. 2333.

Electrocardiographic Changes in Cor Pulmonale.—Examination of the electrocardiograms with special regard to the characteristic changes of cor pulmonale in 46 cases of bronchial asthma selected at random disclosed signs of right coronary insufficiency in 15 cases, in 5 cases only during attacks. Grave symptoms, such as dilatation of the right half of the heart, dilated conus pulmonale, cyanosis or edema, were present in 6 of the 15 and in only 2 of the other cases. The QRS complexes were on the whole more typical of right preponderance during attacks than in the intervals free from attacks and were most typical in the 6 cases mentioned. The proportional figures were higher in cases of right coronary insufficiency than in the others, higher during attacks than in the free intervals, highest in the 6 cases named. For greatest help from electrocardiography in asthmatic patients systematic examinations should be made during attacks and the free intervals, accompanied by determination of the blood pressure.

Hygiea

*Determination of Serum Iron and Its Practical Significance. J. Waldenström.—p. 2341.

Determination of Serum Iron and Its Practical Significance.—Waldenström says that in iron deficiency anemia a persisting low serum iron level after normalization of the hemoglobin values indicates further treatment with iron. Normal serum iron excludes iron deficiency anemia. In iron deficiency without anemia (latent sideropenia) low serum iron reveals the nature of the condition. Such cases are common after gastric operations. In pernicious anemia with normal or nearly normal blood values after liver therapy a continued low serum iron points to need of iron therapy; it may also indicate a complication such as cancer of the stomach. In atypical cases of pernicious anemia the influence of liver therapy on the serum iron value supports the diagnosis; the sudden drop in the serum iron on liver therapy is one of the earliest and most specific signs of remission. In inoperable cancer of the stomach with cachexia, improvement may result from treatment with iron. The iron tolerance test may reveal cases which will lend themselves to the treatment.

Book Notices

A Textbook of Surgery. By American Authors. Edited by Frederick Christopher, B.S., M.D., F.A.C.S., Associate Professor of Surgery, Northwestern University Medical School, Chicago. Fourth edition. Cloth. Price, $10 Pp. 1,548, with 1,483 illustrations on 762 figures. Philadelphia & London: W. B. Saunders Company, 1945.

The caliber of the contributors to this textbook of surgery is without peer in the world today. In this revision the list of contributors has been increased, the text reset to a two column formation on each page and the content expanded. The selection of men actively engaged in teaching has suppressed to a considerable extent a tendency to enlarge the subject matter to a degree of technicality beyond the capacity of the student. There is little room to disagree with the opinions rendered in the book, because of the authority behind each contributor. The inclusion of a separate section on modern chemotherapy is valuable from several points of view. It reflects the proper importance of these recent advances in surgery, it will enhance the possibilities of prompt inclusion of future progress and it should eliminate more rapidly discarded technics. The section on military surgery is still of value in that many lessons learned from the war have not as yet been fully correlated with civilian application. No one desires any other future use for this subject, but its value to posterity is still a possibility.

The position which this work will occupy in medicine is still difficult to analyze. For the student it appears to be more valuable as a reference book, and yet its concise, terse and fundamental approach makes it valuable for primary teaching of surgery. For the intern, resident and general practitioner it may be more useful. For more advanced study a bibliography has been included at the end of each section which has invariably included recent references. If the hazard "to become all things to all men" can be avoided successfully, this book will continue to be an efficient instrument of instruction in surgery.

Cleft Palate and Speech. By Muriel E. Morley, B.Sc., F.C.S.T., Speech Therapist to the Royal Victoria Infirmary, Newcastle-upon-Tyne. Fabrikoid. Price, 7s. 6d. Pp. 160, with 52 illustrations. Baltimore: William Wood & Company; Edinburgh: E. & S. Livingstone, 1945.

This handbook by the speech therapist to several prominent British hospitals gives a most comprehensive view of this still difficult surgical and therapeutic problem. The text is well arranged and illustrated by line drawings, colored plates and photographs.

An introductory chapter deals with the embryologic formation of the nose, lips, alveolar rim, hard and soft palate and superior maxilla and mandible. There follows a classification of the different types of cleft lip and palate based on the embryologic derangement which causes them. There is a well illustrated description of the anatomy of the hard and soft palate, including the attached muscles with their innervation and blood supply. Chapter three provides an interesting historical account of the major developments in the surgical technic of palate repair with descriptions of the Langenbeck, Dieffenbach and Ferguson methods of median suture, the Lane flap and the Brophy compression operation. In more detail are described the Passavant plastic procedures on the pharyngeal wall, Ganzer's forerunner of the push-back technic of Dorrance, and Gillies' use of prosthetic appliances in closing defects of the hard palate. Wardill's pharyngoplasty is considered in detail, and his four-flap operation is illustrated by colored plates. Dennis Brown's two stage procedure for narrowing the nasopharynx is clearly described. In consideration of all the surgical procedures there is stressed the extreme desirability of a narrowed nasopharynx, an elongated and united soft palate, the elimination of palatal tension and the avoidance of nasal and oral scar tissue.

Subsequent chapters describe the problem of feeding in cases of cleft palate, the mechanism of normal speech development and the abnormalities in speech which result from palatal deformities. These speech abnormalities are further considered in great detail, being subdivided first according to the preoperative speech defects and secondly to the anatomic defects which cause them.

The author next considers the technic of examination of the patient prior to speech training, with attention to age, palatal anatomy and competence of the palatopharyngeal sphincter. This is followed by a detailed analysis of the common postoperative speech defects. A chapter is devoted to the subject of speech treatment and the conditions affecting its success, such as the anatomic and physiologic results, the patient's intelligence, his hearing acuity, his speech "sense" and his age, environment and personality. Further suggestions as to remedial procedures follow. The book concludes with 25 cases histories illustrative of the material previously discussed and subdivided according to the specific problem to be illustrated. A short bibliography is appended.

For the speech correctionist dealing with the problem of cleft palate, this book affords a comprehensive and well presented aid.

Lehrbuch der allgemeinen Kinderpsychiatrie einschliesslich der allgemeinen Psychiatrie der Pubertät und Adoleszenz. Von M. Tramer, Dr. med. et phil., Priv. Doz. der Universität Bern. Second edition. Cloth. Price, 32 Swiss francs. Pp. 517, with 8 illustrations. Benno Schwabe & Co., 1945.

In this edition the text has been improved and made more complete. It contains fourteen chapters, starting with an introduction of psychiatry of children and a survey of the psychologic views in child psychiatry, followed by the standard of development or evolution in the normal child, methods of investigation, foundation of general psychopathology, general etiology, various diseases, diagnosis, prognosis and treatment. There is a chapter each on social behavior and psychologic hygiene. There is an excellent chapter on 27 illustrative cases. This book should be helpful to psychiatrists.

Jobs for the Physically Handicapped. By Louise Neuschutz. With a foreword by William Rush Dunton Jr., M.D. Cloth. Price, $3. Pp. 240. New York: Bernard Ackerman, Inc., 1944.

The author combines case experiences of physically handicapped persons, with ideas for entertaining and profitable hobbies for these persons, into an interesting and informative book. The suggestions range from individual hobbies to trades such as woodworking and bookbinding; the book also covers cooking, drawing and writing. Details of practice are not given; the references, however, are adequate. The principal merit of the book lies in the interesting presentation of material and the emphasis on the opportunities available and open. This should assist in providing interest and motivation to the handicapped, with whom the great problem is often not to find tasks of which they are capable but to insure that they are motivated to do them. The book is recommended for all persons who are physically handicapped.

General Biology and Philosophy of Organism. By Ralph Stayner Lillie. Cloth. Price, $3. Pp. 215. Chicago: University of Chicago Press, 1945.

The author is well qualified to write about the subject. As stated in the preface, "this short book is an essay on theoretical biology." Mr. Lillie discusses his subject in a clear, logical, understandable manner. He demonstrates how the simple fact of evolutionary change proves that nature is not wholly stable. Evolution clearly indicates that the existence of various forms, systems and activities were at some time new. A general idea of the clarity with which he expresses himself may be obtained from a brief quotation from the summary at the end of the book: "In life processes, as experienced in ourselves, we find a foundation of stable conditions and processes which are physical; superimposed on these we find also the immediately felt quality or property which we call psychical. The latter is a matter of direct experience and is active in the present; and since present time is new (not previously existent), the psychical would appear to provide the required source of novelty." The book is well written and contains a well chosen bibliography and an adequate index.

Pastimes for the Patient. By Marguerite Ickis. Cloth. Price, $3. Pp. 285, with illustrations by Reba Selden Esh, New York: A. S. Barnes and Company, Inc., 1945.

This book, written for the use and guidance of hospital patients, will be of interest to all convalescing patients. Stimulating hobbies and games are described in detail and are well illustrated. Certain of the pastimes, such as photography, are rather ambitious undertakings for the patient. The printing is somewhat small, but it is readable and the book can be recommended.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

NICOTINE CONTENT OF SMOKE FROM CIGARS AND CIGARETS

To the Editor:—**Can you give me the comparable effect on the heart of a normal man aged 50 between smoking approximately thirty cigarets a day (inhaling) and six or seven cigars a day (not inhaling).**

M.D., Missouri.

ANSWER.—Thirty cigarets, weighing about 1 Gm. apiece and containing about 2 per cent nicotine in the tobacco, might contain just about the same amount of nicotine as six cigars weighing about 5 Gm. apiece and with the same nicotine content. About one fourth of the nicotine content of the tobacco may be expected to appear in the puffed smoke, though this figure may vary greatly, depending on the manner of smoking. Several writers have reported that a higher proportion would appear in cigar than in cigaret smoke. Only about 12 per cent of the nicotine escapes with the exhaled smoke after inhalation, as compared to about 33 per cent after simple puffing without inhalation, but in either case the bulk of the nicotine appears to be deposited in the mouth or air passages. Accordingly, it might be possible for the thirty cigarets inhaled to yield about the same amount of nicotine absorption as the six cigars not inhaled—about 100 mg. of the alkaloid, which, even if distributed through fifteen hours in the day, would give a concentration of more than 6 mg. per hour, a level at which definite symptoms might be expected in an average normal person, even with moderate habituation to the alkaloid.

Since either cigarets or cigars may vary greatly in their nicotine content, however, and the latter especially may vary greatly in size, and both may be smoked at widely different rates and with the discarding of greatly different amounts of tobacco and retained constituents of the smoke in the unburned stumps, this conclusion required much caution. Moreover, much nicotine may be absorbed from the unburned stump of a cigar by the user who chews or sucks as he smokes, while on the other hand the habitual spitter may rid himself of some of the nicotine taken in by expectoration.

The nicotine discussed is the chief factor found in cigaret or cigar smoke which may be expected to affect the normal heart, with the production of changes in rate and rhythm and even in electrocardiographic patterns in some cases. Carbon monoxide in the smoke would be greater in the cigar smoke than in the cigaret smoke but rarely sufficient to produce symptoms. The same is generally true of the other constituents of tobacco smoke.

The most important experimental study of the factors discussed was that of J. Percy Baumberger *(J. Pharmacol. & Exper. Therap.* **21**:35 [Feb.] 1923).

HIRSCHSPRUNG'S DISEASE

To the Editor:—**A 3 year old boy has Hirschsprung's disease. He apparently has never had a normal bowel movement, and the condition has been diagnosed on the basis of x-ray findings. He has been without bowel movements for periods of five to eleven days, at which times an oil enema has been given. He also has received syntropan. If the drug is withheld, considerable discomfort ensues. The child is on a low residue diet and is given Vi-penta pearls. A lumbar sympathectomy has been suggested at or about the age of 6. In my opinion syntropan is contraindicated, at least from a physiologic point of view.**

M.D., Georgia.

ANSWER.—The treatment of megacolon depends on the severity of the condition and the age of the patient. Surgical resection is the procedure of choice when patients have not responded to sympathectomy or medical treatment, but it should not be undertaken if the patient is less than 5 years of age.

Medical treatment usually consists in repeated thorough emptying of the colon, administration of mecholyl bromide, neostigmine bromide or syntropan or spinal anesthesia, other parasympathetic paralyzants and sympathetic stimulants. If the condition does not respond to spinal anesthesia, sympathectomy will be of doubtful value. Sympathectomy sometimes is followed by satisfactory bowel function, but the enlarged colon rarely assumes normal proportions.

A comprehensive consideration of this problem may be found in an article by Penick in THE JOURNAL, June 9, 1945, page 423.

IMPOTENCE AFTER PROSTATECTOMY

To the Editor:—**A few months ago a patient had a prostatectomy for hypertrophy. Since the operation he has been impotent and has received massages twice a week for five or six months with slight improvement. Could there have been some radical changes of the blood supply and could the blood supply be reestablished by operation? This is not a psychologic case.**

W. M. Sykes, M.D., Dallas, Texas.

ANSWER.—After a surgical operation on the prostate gland there may develop, in a small percentage of patients, various degrees of impotence. This, however, is not caused by an interference with the blood supply to the genitalia. Therefore in this patient the cause of the impotence is not related to a disturbance of the blood supply. It is questionable whether prostatic massages will be of benefit unless there still exists an infection of the prostate gland. Likewise the use of androgen will not be of value unless the impotence is caused by a deficiency of this material. If it has not been done, a careful search should be made for some general disorder that may have a bearing on the patient's sex trouble such as anemia, syphilis or a variety of organic neurologic disorders. It is not yet determined whether a psychic disturbance may not be involved.

MARRIAGE AND PREGNANCY IN MULTIPLE SCLEROSIS

To the Editor:—**A woman has multiple sclerosis, which began at the age of 14 and has progressed little up to her present age of 21. Her only symptoms are weakness of the left ankle, with occasional attacks of dizziness and headache with some fatigue. What are the odds of this condition becoming aggravated following marriage and pregnancy? I have 2 patients, men, who are married, with stationary symptoms over a ten year period of time.**

M.D., New York.

ANSWER.—There is no evidence to date to indicate that marriage is contraindicated in a case of multiple sclerosis. When a woman who has multiple sclerosis becomes pregnant it must be admitted that the disease may become active again or increase in severity. Pregnancy, however, is not necessarily deleterious to the course of events (multiple sclerosis) and would probably be even less often so if the patient was more carefully guarded from fatigue during pregnancy. She should be given a longer rest period during the puerperium and afterward. She should not be allowed to nurse her child. It is impossible to anticipate whether the illness will become aggravated or not by a pregnancy. The patient should be informed of all the facts in the matter and then be permitted to use her own judgment.

ANGINA OF EFFORT AND HYPERCHOLESTEREMIA

To the Editor:—**A white woman aged 38 has a chief complaint of severe constriction substernal pain on effort. This clears promptly on rest or glyceryl trinitrate and is apparently a typical "angina of effort" syndrome. Other than this her general health has always been good. Examination by a competent cardiologist shows a negative electrocardiogram with the heart slightly enlarged to the left by orthodiagram. Further the studies in the hospital were essentially negative except for a blood cholesterol of 460. The glucose tolerance test was normal. The Wassermann reaction was negative. On a low cholesterol diet her blood cholesterol dropped to 280 and her symptoms disappeared. As long as she watches her diet her cholesterol remains low and she is free of symptoms. If she becomes careless, her cholesterol increases and symptoms return. What could cause this type of hypercholesteremia and could you offer any suggestion, other than dietary, for treatment? The blood pressure ranges from 120/70 to 140/80.**

M.D., Pennsylvania.

ANSWER.—The clinical history as stated is that of angina pectoris on effort, which is due to coronary atherosclerosis in the great majority of cases. Negative physical examination, electrocardiogram and x-ray studies do not rule out coronary insufficiency with angina pectoris. The high blood cholesterol content is in favor of the diagnosis and is a finding that is not at all infrequent in young patients with coronary disease and points undoubtedly to a disturbance of cholesterol metabolism as an etiologic factor in the early occurrence of coronary atherosclerosis in these cases. It is unusual for a woman under 40 to have angina pectoris, but the evidence here seems to support such a diagnosis. The fundamental cause of the hypercholesteremia and disturbed cholesterol metabolism is still a subject for future research.

Undoubtedly dietary treatment is of prime importance, especially in prevention, and it is quite likely that thyroid therapy would prove in this case, as in others, a useful preventive measure, to be carried out cautiously, however, in the face of angina pectoris.

There is no statement about the basal metabolic rate or weight. These should be followed closely. It is probable that the basal metabolic rate would be found low in this case.

POSSIBLE REINFECTION IN PATIENT TREATED FOR CONGENITAL SYPHILIS

To the Editor:—In August 1945 I was consulted by a Negro woman aged 22 who had what appeared to be a typical chancre of the lip—an annular, distinctly indurated, slightly elevated lesion with an eroded surface crusted with grayish yellow exudate; small satellite nodes were palpated at the angle of the jaw. Wassermann and Kahn tests on her blood were both negative and a diligent dark field examination was entirely fruitless. One week later the dark field and Kahn were still negative, while a doubtful Kolmer Wassermann was reported. Five days later Kahn and Wassermann reactions were both strongly positive. An injection of 0.04 Gm. of oxophenarsine hydrochloride (mapharsen) was given, and the lesion promptly improved. No secondary lesions were ever noted. However, further examination did reveal corneal opacities. These the patient attributed to an eye infection arising at the age of 11 years. She had been treated at a reputable clinic, a report from which disclosed diagnosis in 1934 of interstitial keratitis on clinical grounds supported by strongly positive serologic tests. During the ensuing five years treatment had been given in the amount of thirty injections of neoarsphenamine 0.2 Gm. and seventy injections of a bismuth preparation of unstated dosage. When the patient was last seen at this clinic in 1939, residual opacities were present and serologic tests were strongly positive. Serologic tests made on the patient at a local hospital in 1943 were negative for syphilis. The following questions arise: 1. Is this a true primary lesion, and if so does it represent an instance of superinfection? Reinfection does not seem to be likely. 2. Is it likely that a tertiary infection (gumma) would follow this behavior pattern? 3. Am I justified in outlining for this patient a regimen routine for primary cases? 4. Is there any warranty for the use of penicillin as less likely to flare up the eye situation? If I could have anticipated the technicalities in this case, I would have insisted on dark field examination of the satellite nodes. Since August the patient has received ten injections of oxophenarsine hydrochloride (0.04-0.06 Gm.) and four of bismuth subsalicylate 0.2 Gm. At the last examination (Oct. 12, 1945) the Wassermann reaction was strongly positive, the Kahn reaction was negative and the eye condition was unchanged, while faint scarring and depression could be detected at the site of the lip lesion. Winder L. Porter, M.D., Dover, Del.

ANSWER.—1. The diagnosis of extragenital primary syphilis in the case described cannot be definitely substantiated in the absence of positive dark field examination from the lesion itself or from the satellite lymph nodes. Several instances of apparently quite definite reinfection in patients treated for congenital syphilis have been reported in the literature. The most recent papers are those of R. D. Hahn (*Am. J. Syph., Gonor. & Ven. Dis.* **25**:200 [March] 1941) and S. D. Allison (*ibid.* **26**:212 [March] 1942). Four such cases are reported in these two papers, in 1 of which treatment was not begun until late in the course of the disease, although in the 3 others treatment was originally begun in infancy. Reinfection cannot be definitely differentiated from superinfection in human beings (The Changing Concept of Reinfection with Syphilis and Its Applicability as a Criterion of Cure, editorial, *ibid.* **29**:474 [Aug.] 1945).

2. It is unlikely that a gumma of the lip would behave serologically in the manner described in this case.

3. Yes.

4. There is nothing in the situation to indicate that penicillin or any other form of treatment will cause the old interstitial keratitis to flare up. Should it be desired to substitute penicillin treatment for the arsenic-bismuth chemotherapy so far given, the patient should receive a minimum of 2.4 million units of penicillin given in sixty intramuscular injections every three hours day and night over a minimum period of seven and one-half days.

ANT CONTROL IN HOSPITALS

To the Editor:—Our hospital is located at the foot of Missionary Ridge in a wooded section with considerable water drainage from the ridge. The hospital has been infested with small red ants for about two years, but the past few months the number has been even greater. Insecticides have been used as a spray, the legs of beds have been set in cans of the solution and various type of powders have been tried. The pest is a menace in every part of the hospital and nurses' home from the surgery to the basement. Are there any remedies that have been used in other communities for this insect? This certainly cannot be the only hospital that has had this problem.

Helen Esther Gillespie, Supt., Chattanooga, Tenn.

ANSWER.—There are a number of different species of ants which invade hospitals and homes. The habits of these ants differ considerably, and no single formula for their control or eradication can be laid down. In fact, the same species of ant may react differently to control measures applied under varying conditions. Some ants have their nests outdoors and enter the buildings for food, while others nest in the walls or basement floors. If their nesting places can be located, the colonies can often be destroyed by applying a small amount of carbon disulfide to the holes entering the nests. The holes should then be covered with packed soil or paper held down with bricks. Carbon disulfide is explosive and inflammable and therefore should not be used near any fire. Sodium fluoride dusted along the places where the ants crawl will often get rid of them, at least temporarily. DDT sprayed freely along baseboards, windowsills and other places where the ants are seen crawling has been found effective in some cases. It is usually applied as a 5 per cent solution in odorless kerosene or as a dust (10 per cent in pyrophyllite). Care should be taken not to get sodium fluoride or DDT into food or where it can be confused with food items. Poisoned baits of several formulas have been employed successfully against ants. Three of these are as follows:

Formula 1. Dissolve 4 ounces of sugar in 1 quart of water and stir in ½ ounce of tartar emetic.

Formula 2. Dissolve ½ pound sugar in 1 pint of hot water and add ½ ounce (62½ grains) of sodium arsenate; bring to a slow boil and strain.

Formula 3. For ants that will not eat sweets but prefer grease and meat, work small quantities of tartar emetic into grease or pieces of bacon rind.

These baits are put out in small containers in the areas where the ants are foraging. Small tin cans with the top indented before putting on the covers or tin pill boxes with holes to admit the ants will suffice. Such poisons should be handled carefully and kept out of the reach of children.

EFFECT OF ANDROGENS ON BREAST ATROPHY

To the Editor:—In a patient 54 years old, what would be the effect of the use of androgens, testosterone propionate or methyl testosterone in causing atrophy of the breasts? M.D., Michigan.

ANSWER.—Administration of the androgens testosterone propionate or methyl testosterone will produce an atrophy of the breasts in many women if the dosage is large enough to suppress ovarian function. Such dosages would amount to 200 to 800 mg. of testosterone propionate per month. Atrophy of the breasts is the result of the neutralization of estrogens and the suppression of ovarian function following inhibition of the anterior pituitary gonadotropic hormone secretion. Androgens will cause atrophy of the breasts only through eliminating the influence of estrogen on the breasts, and as in a patient of 54 there is already an absence of estrogens due to the menopause, further atrophy would not occur following androgen therapy for relief of menopausal symptoms.

AGE FOR APPLICATION OF ORTHODONTIC APPLIANCES

To the Editor:—What is the earliest age at which orthodontic work should be begun on a child? M.D., New York.

ANSWER.—The earliest age at which orthodontic "work" should be undertaken is that time when there exists a condition which stands in the way of normal growth, development or function of the teeth and dental structures and which has little or no possibility of being corrected by further growth or developmental processes or by the institution of procedures which are simpler and less disturbing to the child.

It is seldom practical to place orthodontic appliances before the deciduous dentition is complete, although occasionally this has been done with satisfactory results. The nature of the particular problem must be the determining factor.

The correction of the condition may not prevent the occurrence of malocclusion from other causes at a later age and, in those conditions in which the malocclusion is due to discrepancies in harmonious relationships which arise from either genetic or growth and developmental causes, more than one period of orthodontic treatment may be advisable. Treatment in the early years in these instances is for the purpose of obtaining maximum functional contribution to the growth and developmental potentialities possessed by the child.

TESTS FOR TRICHINOSIS

To the Editor:—I am writing you regarding a skin or blood test for trichinosis. In a recent article I noted that there has been found a high percentage of people infected when the muscle is examined at necropsy. I believe there is some sort of a skin or blood test which might pick up these chronic cases in which there would perhaps be some muscle pain. If there is such a test would you be so good as to refer me to the company from whom I could buy the antigen.

Fred G. Holmes, M.D., Phoenix, Ariz.

ANSWER.—While the immediate intradermal test and the precipitin test are of considerable help in the diagnosis of acute or recent trichinosis, these tests are of relatively little value in discovering old trichinosis, particularly old subclinical infection. There is no correlation between these tests during life, even in patients with a history of vague muscular pains, and the finding at necropsy of Trichinella spiralis in the skeletal muscles due to subclinical infection. Antigen for skin testing may be obtained from either Eli Lilly and Company or Lederle Laboratories, Inc.